THOMSON

XMU 3600

eXtensible Management Unit

XMU
User Manual
Release 4.50

46072582FA01

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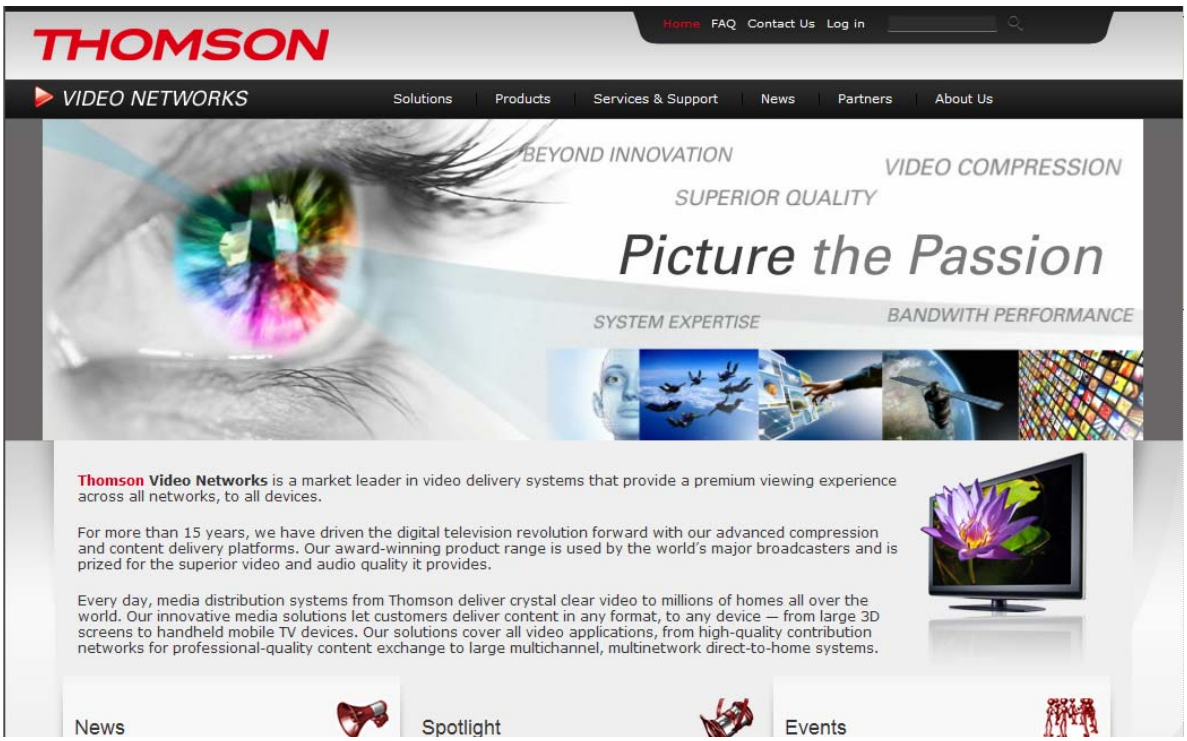
Contacting Thomson Video Networks

Contacting Thomson Video Networks: http://www.thomson-networks.com/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Thomson Video Networks reserves the right to make changes at any time without prior notice in order to improve design and supply the best possible product.

Manual Conventions

The following symbol conventions are used in this manual:

	This symbol is intended to alert you to the presence of a potential for property damage, personal injury or death.
	This symbol identifies conditions or pratices that could result in damage to this device or other property.
	This symbol indicates supplemental information that helps you make better use of the device.
	This symbol indicates important information that helps you make better use of the device.
	This symbol indicates the following information will help you solve a problem.

Set of XMS/XMU manuals

1. XMS/XMU documentation included in the XMS software and XMS/XMU CD-ROM.

XMS/XMU documentation in pdf format is included within the XMS/XMU software. It consists of:

XMS/XMU documentation

XMS/XMU Specifications manual (46073348CA)	This manual is a general presentation of the XMS Management System and XMU Management Unit. It gives the sizing, the ordering references and the list of the managed devices with their releases. It summarizes the XMS user application features.
XMS/XMU Alarms manual (46072227LA)	This manual provides the list of alarms managed by XMS/XMU Management System.

XMU documentation

XMU Installation manual (46073240AB)	This manual contains all the information required to set up the XMU Management Unit. A printed copy is also provided with the XMU Management Unit.
XMU User manual (46072582FA) **- this manual.**	This manual contains all the information required to use the XMU Management Unit (including the Installation manual).

XMS documentation

XMS Server Platform Installation manual (46073347AB)	This manual explains how to set up and start up the XMS server platform for proper operation in your Head-End. A printed copy is also provided with each XMS server platform.
XMS Software Installation manual (46072194LD)	This manual provides the required conditions and the operating procedure for upgrading the XMS Server software onto the XMS Server platform and for installing or upgrading the XMS client software. A printed copy is also provided with each XMS software upgrade kit and with each XMS server platform (for installing XMS client software).
XMS Software Operation manual (46072193PA)	This manual contains all the information required for the Operator to use the applications of the XMS Management System.

XMS SNMP Programming Guide (46073519CA)	This document describes the {**SNMP Agent**} which is a standard interface between an NMS (Network Management System) and any device controlled by the XMS 3500 and the XMS 3500 itself.
CAS Management User Manual (46073581BA)	This manual contains all the information required to provision interfaces with CAS systems and set-up PayTV configurations using XMS Management System. It describes the XMS {**Commercial Configuration**} application and the OpenCAS/OpenSCS gateway.
Telecom Transmission Management User Manual (46073582BA)	This manual contains all the information required to set up telecom transmissions managed by the XMS Management System. It describes the XMS {**Telecom Transmission Desktop**} application which enables the Telecom Operator to monitor IP (and legacy ATM) transmissions and manage profile and address books. It also describes the XMS {**Web Telecom Transmission**} application which enables the user to manage and monitor transmissions via a Web Browser.
Setup and download tools User Manual (46073583BA)	This manual describes different tools for performing the setup of the equipment (including the IP address), for downloading new product packages to one or more devices and for updating options on devices.
Signaling Editor User Manual (46073584BA)	This manual describes the SigEditor user-friendly tool used for editing all SI/PSI tables.
Time Management User Manual (46073585BA)	This manual contains all the information required for the devices of the same domain (a Head-End for example) to be time synchronized.

Flextream documentation

Flextream Configuration Guide (46073490CA)	This manual contains all the information required to set up the Flextream statistical multiplexing.

Redundancy documentation

Redundancy Configuration Guide (46073491CA)	This manual contains all the information required to set up the redundancy managed by the XMS Management System.

2. Umbrella XMS documentation included in the Umbrella XMS CD-ROM.

XMS Umbrella Specifications and Operation manual (46073417CA)	This manual contains all the information regarding the Umbrella XMS feature.

3. High Availability XMS documentation included in the High Availability XMS CD-ROM.

XMS High Availability User Manual (46073518AB)	This manual aims to guide the customer to install, configure and operate the XMS High Availability (HA). XMS High Availability (HA) is based on Safekit Mirror architecture. It provides a robust, efficient, and easy way to set-up 1+1 XMS server redundancy.

Purpose of this manual

This manual contains all the information required to use the XMU Management Unit (including the Installation manual).

It contains three chapters.

Chapter 1 - INSTALLATION and START-UP explains the operations necessary on initial start up: equipment connection, power up, set-up.

Chapter 2 - OPERATION describes how to save/recall a reference configuration to/from a removable storage device (USB key).

Chapter 3 - SERVICING gives useful information about firmware, application software upgrading and option management.

XMU SPECIFICATIONS are provided in the XMS/XMU Product Specifications manual (ref. 46073348).
XMU REDUNDANCY is described in the XMS/XMU Redundancy Configuration Guide (ref. 46073491).

General Safety Instructions

Refer to the instructions given in the *HP™ ProLiant DL360 Documentation* provided by the server manufacturer or retrieve this information from the HP web site at the following url: http://www.hp.com

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1.1 - INSTALLATION PROCEDURE

The following steps are required for device installation and initial configuration:

1. Mounting the device in a rack;
2. Powering the device;
3. Entering the initial parameters via the Command Line Interface:
   - setting the IP parameters,
   - adding a route,
   - setting the Date/Time,
   - setting the NTP configuration,
   - declaring the serial device server (if any);
4. Enabling an XMU expert parameter called ***Boot Standby*** when using a XMU 1+1 (or 1+2) redundancy scheme;
5. Rebooting the server.
6. Connecting the device to the other devices.

1.2 - RACK MOUNTING

Refer to the instructions given in the *HP™ ProLiant DL360 Documentation* provided by the server manufacturer or retrieve this information from the HP web site at the following url: http://www.hp.com

1.3 - POWER UP

Caution! Check that the XMU is not yet connected to the LAN as factory-set IP addresses may cause disturbance on the LAN when the XMU is switched on (address conflict).

Connect the power cord and switch on the device.

1.4 - SETTING THE INITIAL PARAMETERS VIA THE COMMAND LINE INTERFACE

1.4.1 - Accessing the Command Line Interface

In this and the following sections, the Command Line Interface will be abbreviated to CLI.

The CLI can be accessed in one of the following ways:

- via the Ethernet link and the PC **Telnet** application if the device IP address is known;
- via the serial link and the PC **hyperterminal** application (or any terminal emulator);
- or via a keyboard, monitor and mouse connected to the XMU 3600.

CLI use is the same regardless of the access mode used.

1.4.1.1 - Accessing the CLI via the Ethernet link

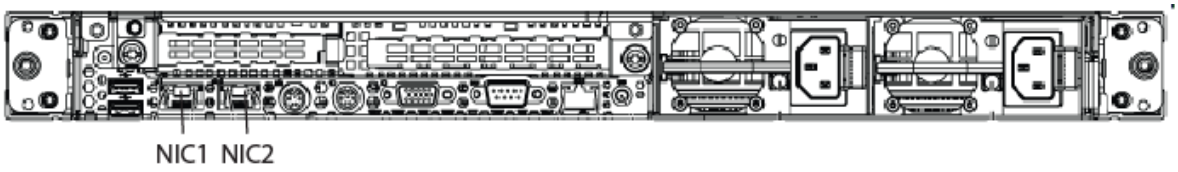
The CLI is accessed via the Telnet application installed on the PC.

The XMU 3600 IP parameters, which are required for Telnet connection, are given on the ***Acceptance Test Report*** shipped with the device.

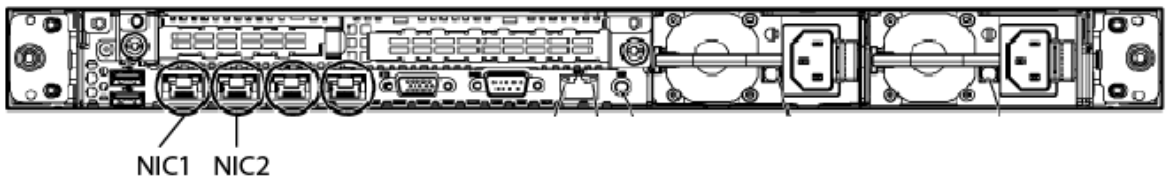
Factory settings:
IP address for eth1: 192.168.1.1
Subnet mask for eth1: 255.255.255.0
Default gateway: 192.168.1.254

Caution!
The Eth0 Ethernet port (NIC1 label) must be used for interfacing the XMUs in the event of XMU Health monitoring (LAN2).
The Eth1 Ethernet port (NIC2 label) must be used for interfacing the managed NEs, the XMS 3500 Management System and the serial device server.
Either Eth0 or Eth1 Ethernet port can be used for interfacing the ECMG/EMMG according to a CAS expert parameter set in the XMS Server.
Please contact Thomson Video Networks before using these interfaces for other purposes.

DL 360 G6 model



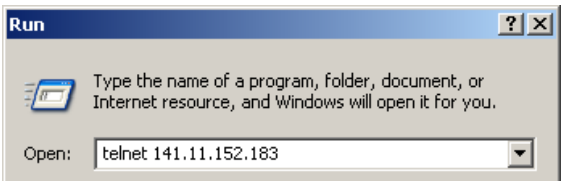
DL 360 G7 model



1. Set up the Telnet application as follows:

Terminal options	No local echo, Block cursor, no CR LF
Emulation	VT100 / ANSI

2. Set up the Telnet connection between the PC and the XMU 3600.


Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
telnet 141.11.152.183

The welcome page displayed after connection will request the user login and password. You must use `admin` and `admin` as login and password respectively.

Caution! The CLI is case sensitive (`admin` is correct, `Admin` is not correct).

1.4.1.2 - Accessing the CLI via the serial link

The CLI is accessed via a RS232 serial link between the XMU 3600 and a terminal or a PC emulating a terminal.

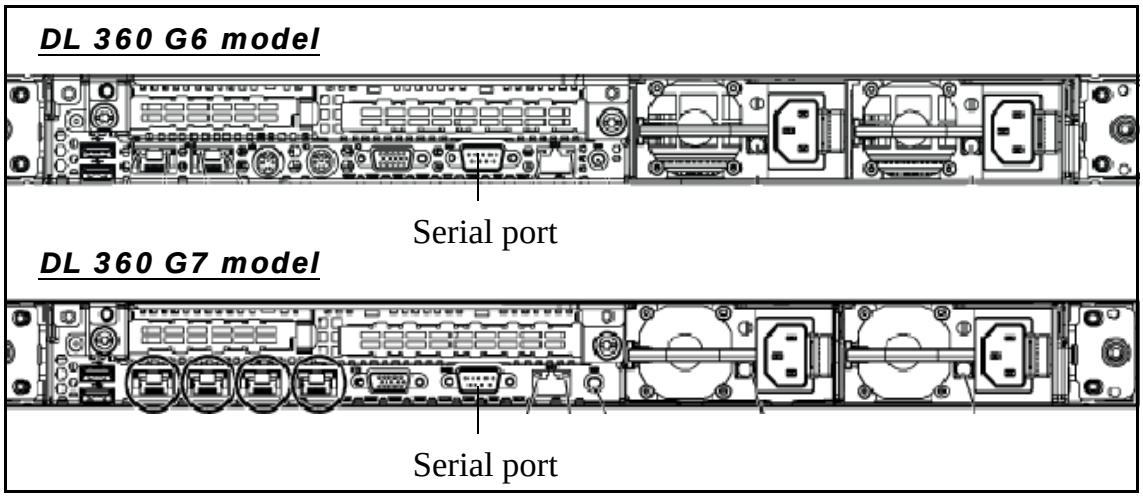


Figure 1.1: Serial port on the XMU rear panel

1. Set up the terminal port as follows: 9600 bauds, 8 bits, no parity, 1 start, 1 stop, no flow control.

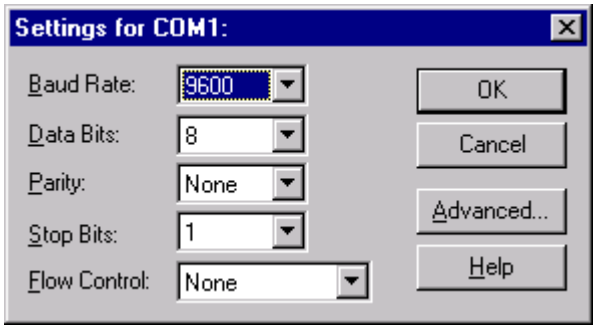


Figure 1.2: Terminal port setup for accessing the CLI

2. Click on ***OK*** to set up the connection between the PC and the XMU 3600.

The welcome page displayed after connection will request the user login and password. You must use `admin` and `admin` as login and password respectively.

Caution! The CLI is case sensitive (`admin` is correct, `Admin` is not correct).

1.4.1.3 - Accessing the CLI using a keyboard, monitor and mouse connected to the XMU 3600

Following machine startup, BIOS startup messages and then Linux distribution startup messages will be displayed, possibly followed by a few application software startup messages.

After about 2 minutes, the screen will stop displaying messages.

Press the **Return** key. The following line will be displayed:

```
> <Hostname> Login:
```

Enter the login (`admin`) then press **Return**. The following line will be displayed:

```
> Password:
```

Enter the password (`admin`) then press **Return**.

1.4.2 - Help

General help

To get the list of all available CLI commands, type `help` after the prompt.

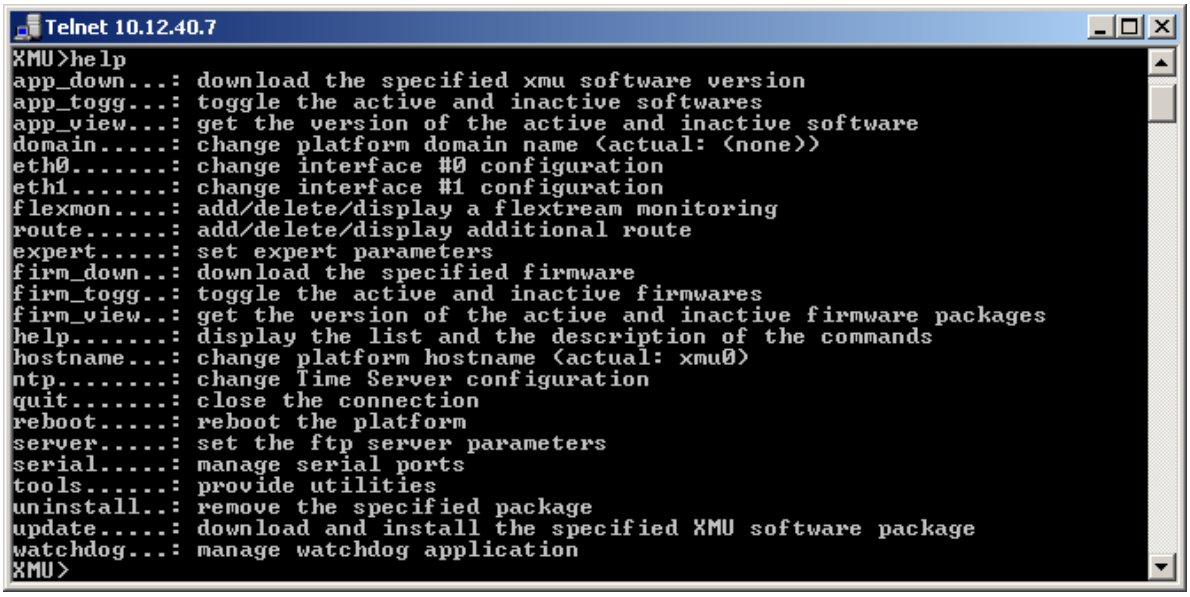

Telnet 10.12.40.7
XMU>help
app_down...: download the specified xmu software version
app_togg...: toggle the active and inactive softwares
app_view...: get the version of the active and inactive software
domain.....: change platform domain name (actual: (none))
eth0.......: change interface #0 configuration
eth1.......: change interface #1 configuration
flexmon....: add/delete/display a flextream monitoring
route......: add/delete/display additional route
expert.....: set expert parameters
firm_down..: download the specified firmware
firm_togg..: toggle the active and inactive firmwares
firm_view..: get the version of the active and inactive firmware packages
help.......: display the list and the description of the commands
hostname...: change platform hostname (actual: xmu0)
ntp........: change Time Server configuration
quit.......: close the connection
reboot.....: reboot the platform
server.....: set the ftp server parameters
serial.....: manage serial ports
tools......: provide utilities
uninstall..: remove the specified package
update.....: download and install the specified XMU software package
watchdog...: manage watchdog application
XMU>

Figure 1.3: General help menu

The CLI provides many commands. Some of these commands are not, however, intended for the device user but reserved for Thomson Video Networks use only. It is therefore important to **only use the commands described in this manual** so as not to disrupt device operation or jam the device, as this would require assistance from Thomson Video Networks Customer Services.

1.4.3 - Setting initial parameters

The following table lists the commands used to set the initial parameters.

User operation	Associated commands	Section
Setting initial parameters	***eth0/ipaddress, eth0/netmask, eth0/gateway, eth1/ipaddress, eth1/netmask, eth1/gateway route/add***	"Editing XMU 3600 IP parameters for Ethernet ports", page 26
	ntp/utc-date & ***ntp/utc-sdate*** ***ntp/cet-date*** & ***ntp/cet-sdate***	"Setting the system clock parameters", page 30
	ntp/ntp1 ***ntp/ntp2***	"Editing NTP server IP parameters", page 31
	serial/install_box	"Declaring the serial device server (if any)", page 33
	watchdog/wd_startup	"Launching watchdog at XMU starting for XMU redundancy with mutual health monitoring", page 36

Each of these initial parameters can be set by the Operator. As indicated in the ***Option*** menu, a change is enabled if the Operator quits the menu with the `quit` command and disabled if the Operator quits the menu with the `exit` command.

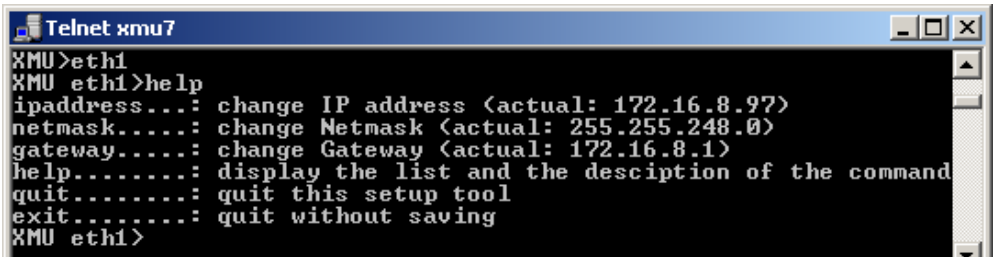

Telnet xmu7
XMU>eth1
XMU eth1>help
ipaddress...: change IP address (actual: 172.16.8.97)
netmask.....: change Netmask (actual: 255.255.248.0)
gateway.....: change Gateway (actual: 172.16.8.1)
help........: display the list and the desciption of the command
quit........: quit this setup tool
exit........: quit without saving
XMU eth1>

Figure 1.4: Option menu

When quitting the Command Line Interface, the Operator will be asked to confirm all changes performed during the session.

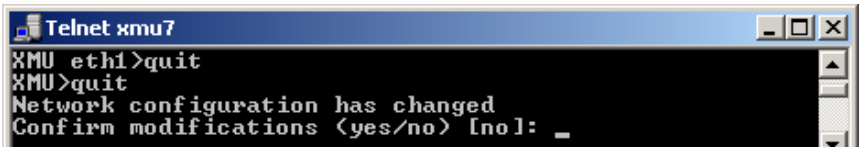


Figure 1.5: Confirmation request to confirm all changes

1.4.3.1 - Editing XMU 3600 IP parameters for Ethernet ports

Caution!

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The Eth1 Ethernet port (NIC2 label) must be used for interfacing the managed NEs, the XMS 3500 Management System and the serial device server.
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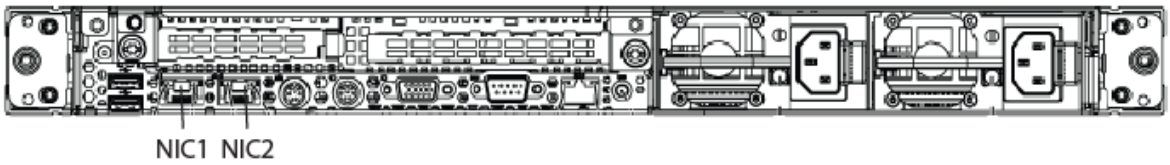
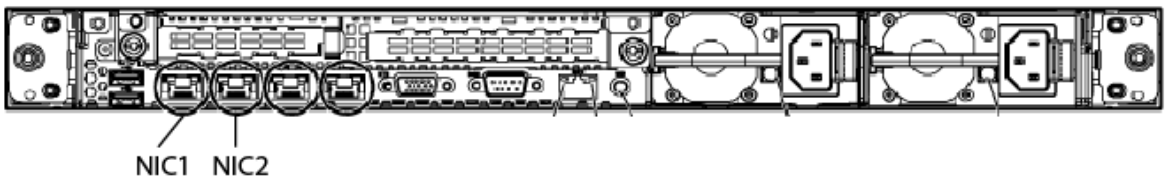


DL 360 G7 model



1.4.3.1.1 - Editing XMU 3600 IP parameters for Ethernet port 0 (NIC1)

The Eth0 Ethernet port (**NIC1** label) must be used for interfacing the XMUs in the event of XMU redundancy with mutual health monitoring (and also for interfacing the ECMG/EMMG according to the CAS expert parameter set in the XMS Server.

Please contact Thomson Video Networks before using this interface for another purpose.

To set the IP address for Eth0, type `Eth0` after the `XMU` prompt to get the `XMU eth0>` prompt then type `help` to see all the commands related to the Eth0 port.

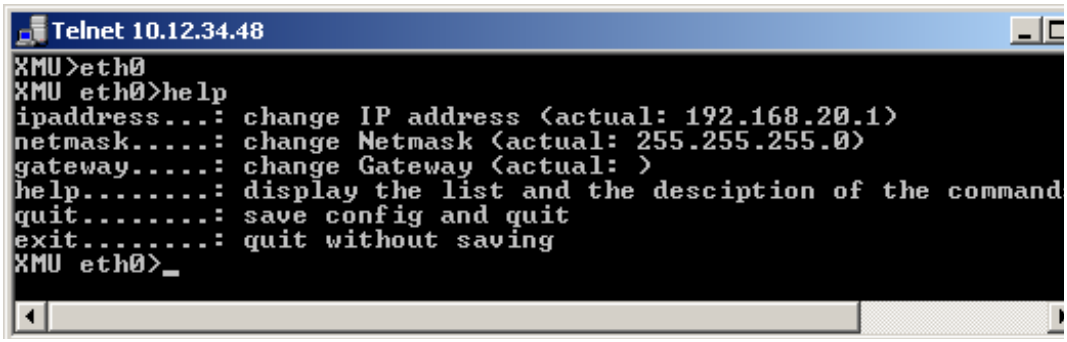

Telnet 10.12.34.48
XMU>eth0
XMU eth0>help
ipaddress...: change IP address (actual: 192.168.20.1)
netmask.....: change Netmask (actual: 255.255.255.0)
gateway.....: change Gateway (actual:)
help........: display the list and the desciption of the command
quit........: save config and quit
exit........: quit without saving
XMU eth0>_

Figure 1.6: Help menu for Eth1 port

To edit a new IP address, enter `ipaddress` then type the IP address:

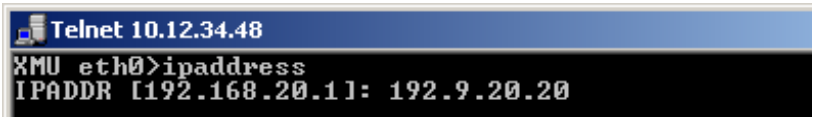


Figure 1.7: Setting the IP address

The two Ethernet ports (Eth0 and Eth1) must not belong to the same IP network.

To edit a new subnet mask, enter `netmask` then type the new mask:

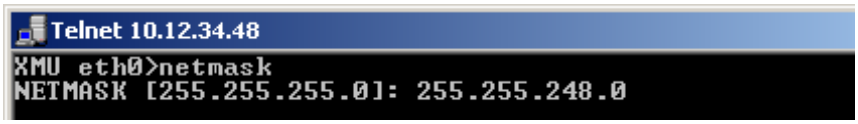


Figure 1.8: Setting the subnet mask

To define a default gateway, enter `gateway` then type its IP address:

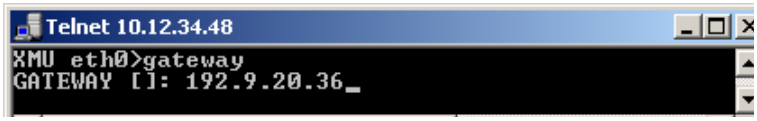


Figure 1.9: Setting the default gateway

Enter `quit` to quit the Eth0 menu and save the changes (or `exit` to quit the menu without saving the changes).

The changes will be applied at the end of the CLI session after the Operator's confirmation (this allows the Linux services to be rerun without requiring an XMU reboot).

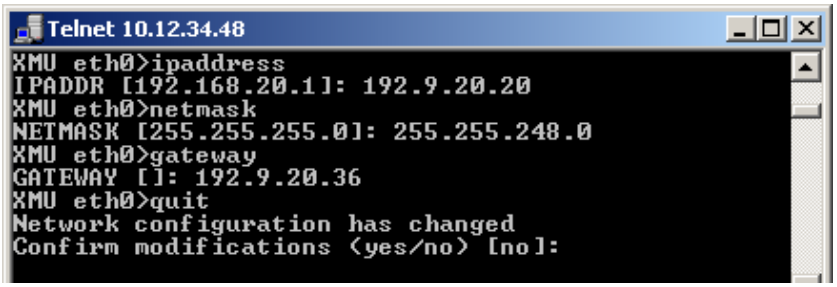


Figure 1.10: Confirmation request

1.4.3.1.2 - Editing XMU 3600 IP parameters for Ethernet port 1 (NIC2)

The Eth1 Ethernet port (**NIC2** label) must be used for interfacing the managed NEs, the XMS 3500 Management System and the serial device server (and also the ECMG/EMMG according to the CAS expert parameter set in the XMS Server).

Please contact Thomson Video Networks before using this interface for another purpose.

To set the IP address for Eth1 Ethernet port (**NIC2**), type `Eth1` after the `XMU` prompt and proceed as with Eth0.

1.4.3.1.3 - Setting a static route

To set a route , type `route` after the `XMU` prompt to get the `XMU route>` prompt then type `help` to see all the commands related to the route(s).

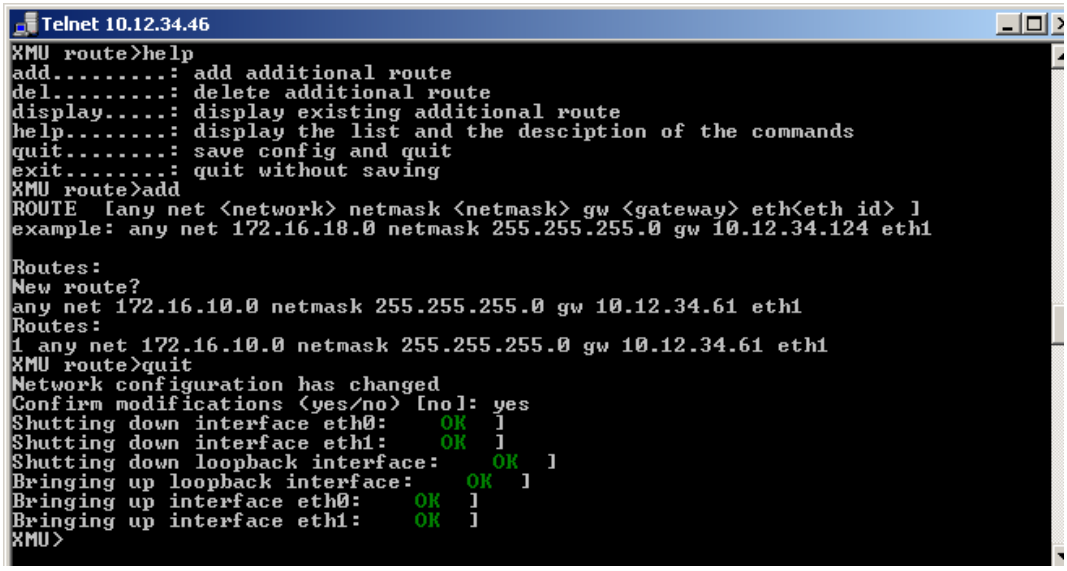

Telnet 10.12.34.46
XMU route>help
add.....: add additional route
del.....: delete additional route
display.....: display existing additional route
help.....: display the list and the desciption of the commands
quit.....: save config and quit
exit.....: quit without saving
XMU route>add
ROUTE [any net <network> netmask <netmask> gw <gateway> eth<eth id>]
example: any net 172.16.18.0 netmask 255.255.255.0 gw 10.12.34.124 eth1
Routes:
New route?
any net 172.16.10.0 netmask 255.255.255.0 gw 10.12.34.61 eth1
Routes:
1 any net 172.16.10.0 netmask 255.255.255.0 gw 10.12.34.61 eth1
XMU route>quit
Network configuration has changed
Confirm modifications (yes/no) [no]: yes
Shutting down interface eth0: OK]
Shutting down interface eth1: OK]
Shutting down loopback interface: OK]
Bringing up loopback interface: OK]
Bringing up interface eth0: OK]
Bringing up interface eth1: OK]
XMU>

Figure 11: Help menu for route

To add a new route, enter `add` then type the new route as follows:

`any net <network> netmask <netmask> gw <gateway> eth<eth id>`

Type `quit` to load modifications and restart Ethernet interfaces.

Type `yes` to confirm modifications.

1.4.3.2 - Setting the system clock parameters

Type `ntp` after the `XMU` prompt to get the `XMU ntp>` prompt then type `help` to see all the commands related to the system clock.

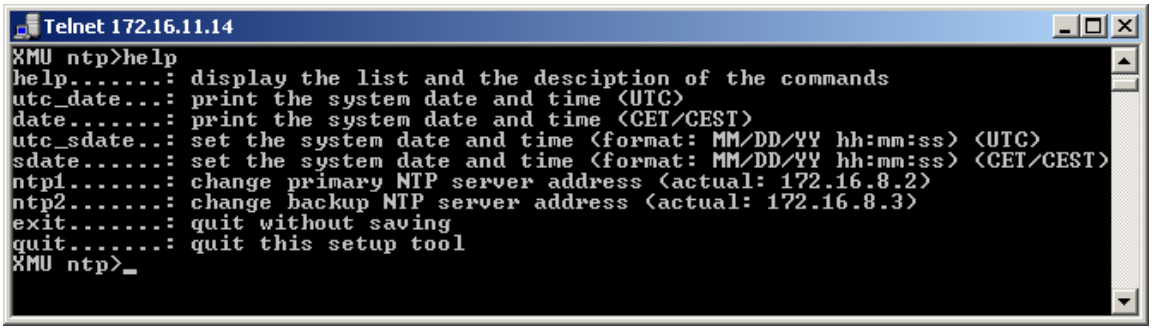

Telnet 172.16.11.14
XMU ntp>help
help.....: display the list and the desciption of the commands
utc_date...: print the system date and time (UTC)
date.....: print the system date and time (CET/CEST)
utc_sdate..: set the system date and time (format: MM/DD/YY hh:mm:ss) (UTC)
sdate.....: set the system date and time (format: MM/DD/YY hh:mm:ss) (CET/CEST)
ntp1.....: change primary NTP server address (actual: 172.16.8.2)
ntp2.....: change backup NTP server address (actual: 172.16.8.3)
exit.....: quit without saving
quit.....: quit this setup tool
XMU ntp>

Figure 1.12: Help menu for the system clock

1.4.3.2.1 - Setting the date and time

XMU supports both CET (Central European Time) and UTC (Universal Time, Coordinated) time formats.

Type `utc_date` to display the UTC date and time of the system clock or `date` to display the CET date and time of the system clock.

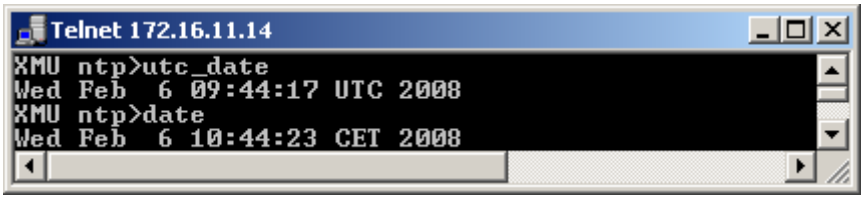


Figure 1.13: Displaying the current Date & Time

To change the date and time, type `utc_sdate` for UTC time and `sdate` for CET time and enter the following fields with the following format: `MM/DD/YY hh:mm:ss`.

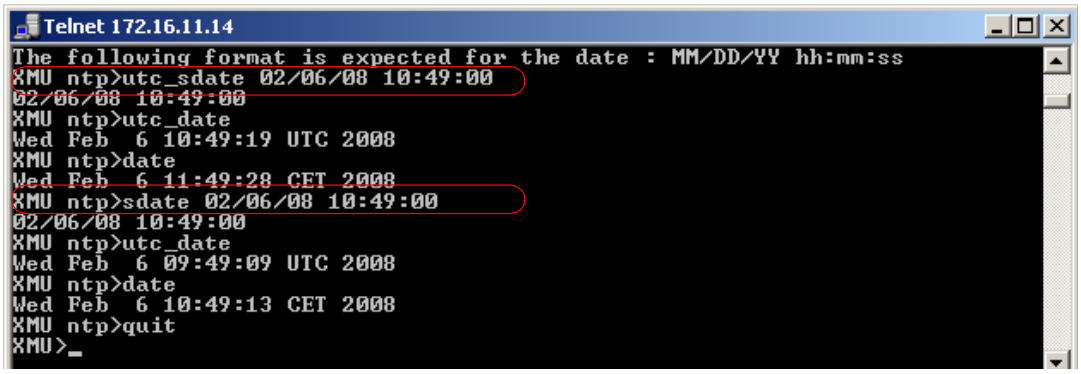


Figure 1.14: Setting the Date & Time

The action is immediate (no confirmation required).

1.4.3.2.2 - Editing NTP server IP parameters

The purpose of NTP (Network Time Protocol) is to synchronize the XMU 3600 system clock with the clocks of other devices via a shared network.

The NTP service can synchronize two clocks provided that the initial offset between these two clocks is slight. You are advised to manually set the XMU 3600 system clock as close as possible to the NTP server clock. Several minutes are required to achieve perfect synchronization between the two platforms.

The XMU 3600 is set to operate as an NTP client. The external NTP server can be backed-up so that two NTP server IP addresses can be set through the CLI: the first one for the primary NTP server (ntp1), the second one for the backup NTP server (ntp2).

Primary NTP server IP address

To edit the primary NTP server IP address, enter `ntp1` after the `XMU ntp>` prompt then type the IP address:

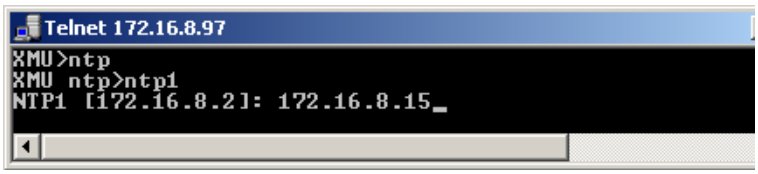


Figure 1.15: Setting an IP address for the primary server

Backup NTP server IP address (if any)

To edit the backup NTP server IP address, enter `ntp2` then type the IP address:

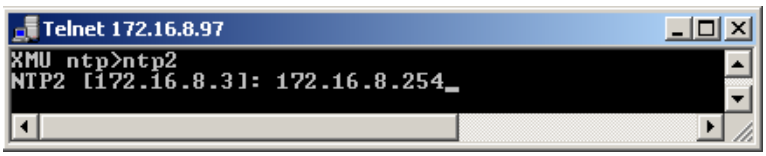


Figure 1.16: Setting an IP address for the backup server (if any)

Enter `quit` to quit the menu and save the changes (or `exit` to quit the menu without saving the changes).

The changes will be applied at the end of the CLI session after the Operator's confirmation (this allows the Linux services to be rerun without requiring an XMU reboot).

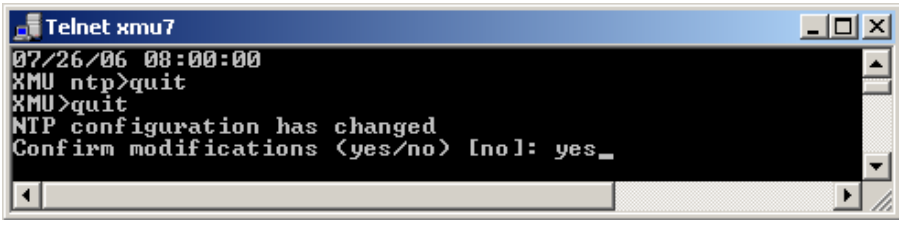


Figure 1.17: Confirmation request

1.4.3.3 - Declaring the serial device server (if any)

Connect the serial device server to the XMU Eth1 port (NIC2) directly or via a WAN.

The two Ethernet ports (Eth0 and Eth1) must not belong to the same IP network.

Installation setup must be performed as described in the serial device server user manual provided with the device. The IP address must be static (no DHCP use). It is set and displayed on the MOXA server front panel.

Use the serial device server web interface to set up the appropriate type of serial link interface. Select "RS485 - 4 Wire" among the three possible choices (RS485 - 2 Wire; RS485 - 4 Wire; RS 422). The selection can also be done via the LCD interface.

Make sure that the serial device server is ON and that it is reachable on the network from XMU (use the ***ping*** command as described in section *"Enabling the ping feature (ping)", page 98*).

For the XMU 3600, the number of managed serial ports is deduced from the installed options. Note that for the whole system, the number of serial links is currently limited to 8 links managed per unit.

In the CLI, type `Serial` to get the `Serial>` prompt.

Help related to the serial device server in the CLI (*help*)

Type `help` after the `XMU serial>` prompt to get the list of all available CLI commands related to the serial device server.

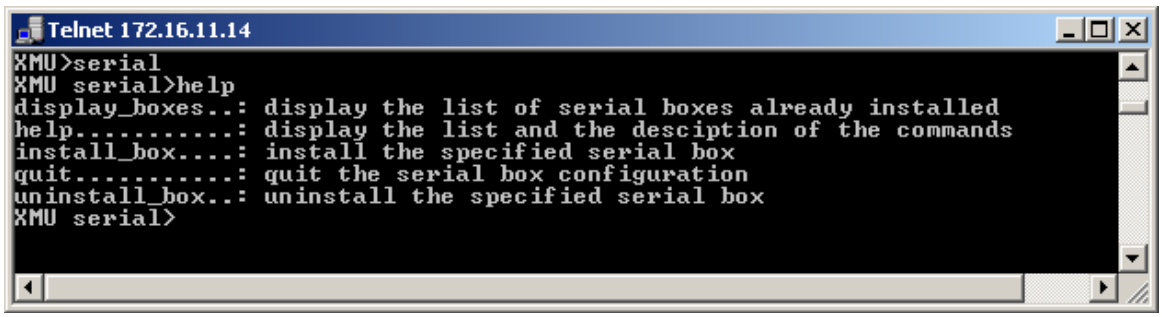

Telnet 172.16.11.14
XMU>serial
XMU serial>help
display_boxes..: display the list of serial boxes already installed
help.....: display the list and the desciption of the commands
install_box....: install the specified serial box
quit.....: quit the serial box configuration
uninstall_box..: uninstall the specified serial box
XMU serial>

Figure 1.18*:* Help related to the serial device server

Display boxes (*display_boxes*)

This command displays the IP list of the serial device servers already installed.

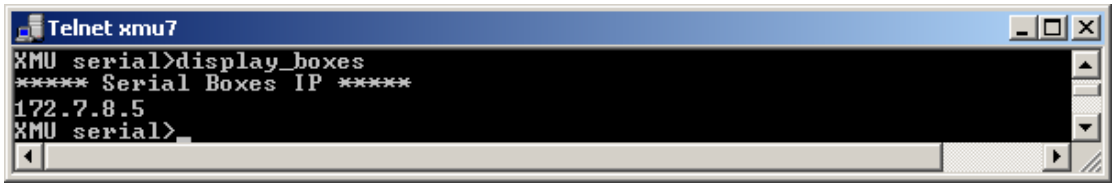


Figure 1.19: Displaying the serial device servers

Declaring the boxes (*Install_box*)

This command is used to install a serial device server on the XMU 3600 and to update the serial port list saved in the XMU.

You can install a server even if it is not connected to the XMU 3600.

Figure 1.20: Installing a serial device server

An XMU 3600 reboot is required.

- Type `quit` to get back to the `XMU` prompt.
- Type `reboot` after the `XMU` prompt.
- Confirm.

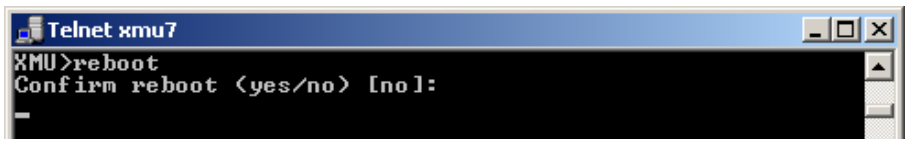


Figure 1.21: Rebooting the XMU

Uninstalling the boxes (*Uninstall_box*)

This command is used to uninstall a serial device server on the XMU 3600 and to update the serial port list saved in the XMU.

Figure 1.22: Uninstalling a serial device server

This command has an immediate effect and does not require confirmation.

1.4.3.4 - Launching watchdog at XMU starting for XMU redundancy with mutual health monitoring

In a XMU redundancy scheme with mutual health monitoring, all XMU must be inter-connected through a dedicated LAN (LAN2 which uses the Eth0/NIC1 ports of the XMUs) to monitor their "health".

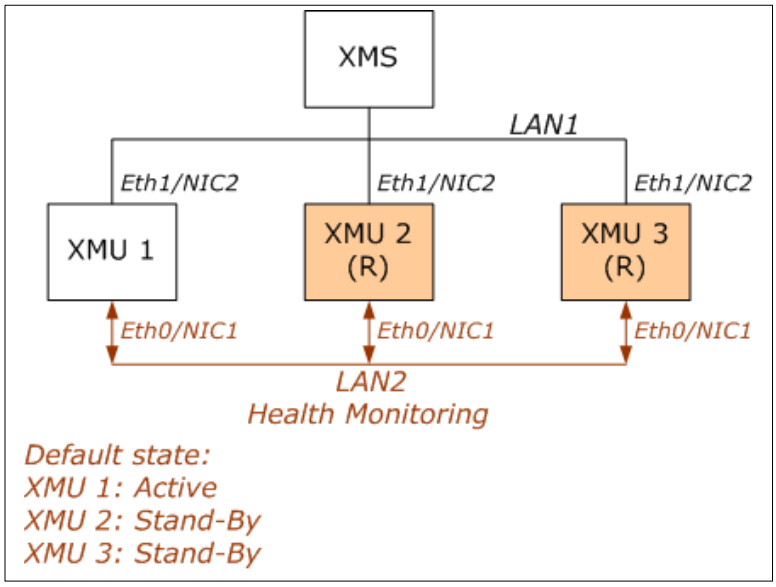


Figure 1.23: Example of topology using 3 XMUs in a 1+2 redundancy scheme

A prerequisite to XMU redundancy is that all XMUs involved in the backed-up group must have their watch-dog enabled through Telnet as described below.

Type `watchdog` after the `XMU` prompt to get the `watchdog>` prompt then type `wd_config` to launch or not watchdog at XMU startup.

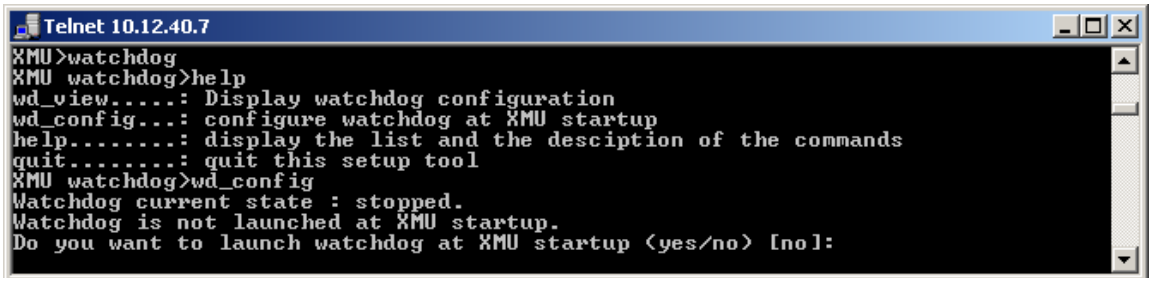

Telnet 10.12.40.7
XMU>watchdog
XMU watchdog>help
wd_view.....: Display watchdog configuration
wd_config...: configure watchdog at XMU startup
help.....: display the list and the desciption of the commands
quit.....: quit this setup tool
XMU watchdog>wd_config
Watchdog current state : stopped.
Watchdog is not launched at XMU startup.
Do you want to launch watchdog at XMU startup (yes/no) [no]:

Figure 1.24: Launching watchdog at XMU startup

An XMU 3600 reboot is required.

- Type `quit` to get back to the `XMU` prompt.
- Type `reboot` after the `XMU` prompt.
- Confirm.

1.5 - SETTING THE BOOT STANDBY PARAMETER IN THE XMS {TECHNICAL CONFIGURATION} APPLICATION

When using a XMU 1+1 (or 1+2) redundancy scheme with or without mutual health monitoring, it is required to enable an XMU expert parameter called ***Boot Standby*** in the XMS {**Technical Configuration**} application.

When this parameter is enabled, the XMU behavior is the following:

- After XMU reboot, XMU will recover in standby mode (even if it was active before the reboot). XMS will tell this XMU whether it should go active or not after reconnection.
- When an active XMU is disconnected from the network (LINK DOWN), this XMU becomes automatically standby (if ***Boot Standby*** is enabled). So when this XMU is reconnected to the network, it does not configure devices before receiving an explicit order from XMS.

This setting has to be present on all XMUs (nominal and redundant). In order to get this setting on all (nominal and redundant) XMUs, proceed as follows:

Case of XMU configured in auto data replication:

1. Disable (if needed) the automatic redundancy on XMU group redundancy in the XMS {**Network Operation**} application;
2. For the active XMU,
   - Check the ***Boot Standby*** box on active XMU in the XMS {**Technical Configuration**} application;

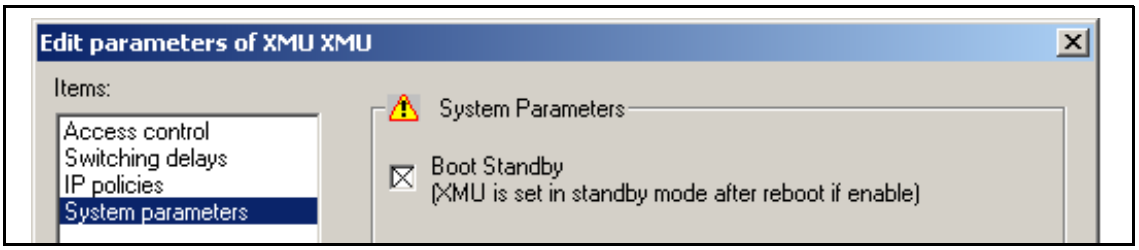


Figure 1.25*: System parameters* page in the XMS {Technical Configuration} application

   - Reboot active XMU;
   - Wait for reconnection with active XMU;

3. For the standby XMU,
   - Wait for end of synchronization on standby XMU;
   - Reboot standby XMU;
4. Enable (if needed) the automatic redundancy on XMU group redundancy;

Case of XMU NOT configured in auto data replication:

1. Disable (if needed) the automatic redundancy on XMU group redundancy in the XMS {**Network Operation**} application;
2. For the active XMU,
   - Check the ***Boot Standby*** box on active XMU in the XMS {**Technical Configuration**} application;
   - Reboot active XMU;
   - Wait for reconnection with active XMU;
3. For the standby XMU,
   - Reinstall the standby XMU as nominal to become visible in the {**Technical Configuration**} application.
   - Check the ***Boot Standby*** box on XMU in the XMS {**Technical Configuration**} application;
   - Reboot XMU;
   - Wait for reconnection with XMU;
   - Reinstall the XMU as backup (as initially);
4. Enable (if needed) the automatic redundancy on XMU group redundancy;

1. The former "save all" files made with ***Boot Standby*** = ***DISABLED*** have to be deleted. If a "load all" is performed with a former file, the XMU expert parameter setting will be damaged.

2. If a USB key have been used to make a cold configuration backup, then the configuration has to be stored again in the USB key (i.e. removable support) once the XMU expert parameter setting is appropriate.

1.6 - CONNECTING THE CABLES

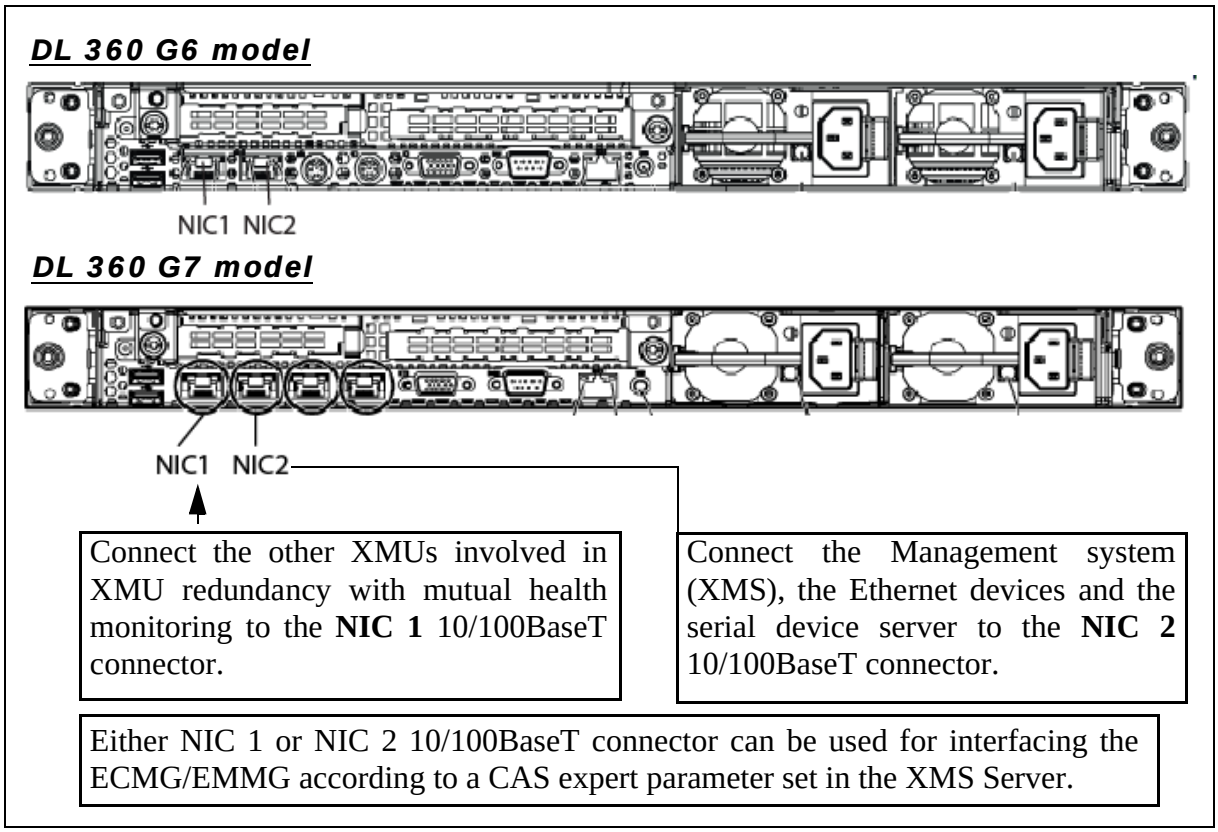

DL 360 G6 model
NIC1 NIC2
DL 360 G7 model
NIC1 NIC2
Connect the other XMUs involved in XMU redundancy with mutual health monitoring to the NIC 1 10/100BaseT connector.
Connect the Management system (XMS), the Ethernet devices and the serial device server to the NIC 2 10/100BaseT connector.
Either NIC 1 or NIC 2 10/100BaseT connector can be used for interfacing the ECMG/EMMG according to a CAS expert parameter set in the XMS Server.

Figure 1.26: Connecting the cables to the XMU 3600

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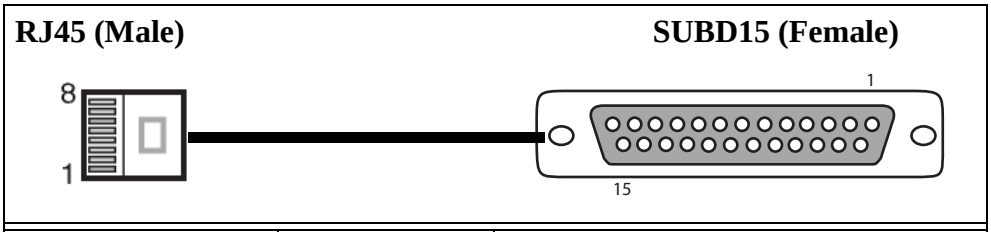
1.6.1 - Wiring view

In the following pages, the wiring of all possible XMU serial connections through the N360HSL0AA serial device server are represented.

As the serial device server is fitted with an RJ45 connector, the following adaptor is required:



Pin 3 (Tx+)	<---------->	Pin 3 (Tx+)
Pin 4 (Tx-)	<---------->	Pin 11 (Tx-)
Pin 5 (Rx-)	<---------->	Pin 10 (Rx-)
Pin 6 (Rx+)	<---------->	Pin 2 (Rx+)
Pin 7 (GND)	<---------->	Pin 7 (GND)

1. The cable must be as short as possible to maintain acceptable line adaptation.
2. Do not forget to declare/install the N360HSL0AA serial device server via the XMU CLI before using a device (NE) that needs a serial link in the topology managed by the XMS (refer to section *“Declaring the serial device server (if any)”, page 33*).

All the connections between the serial device server and the serial devices use a SubD15 connector on the serial device server end. Twisted pair cable impedance is between 110 and 120Ω. The termination resistors must have the same value.

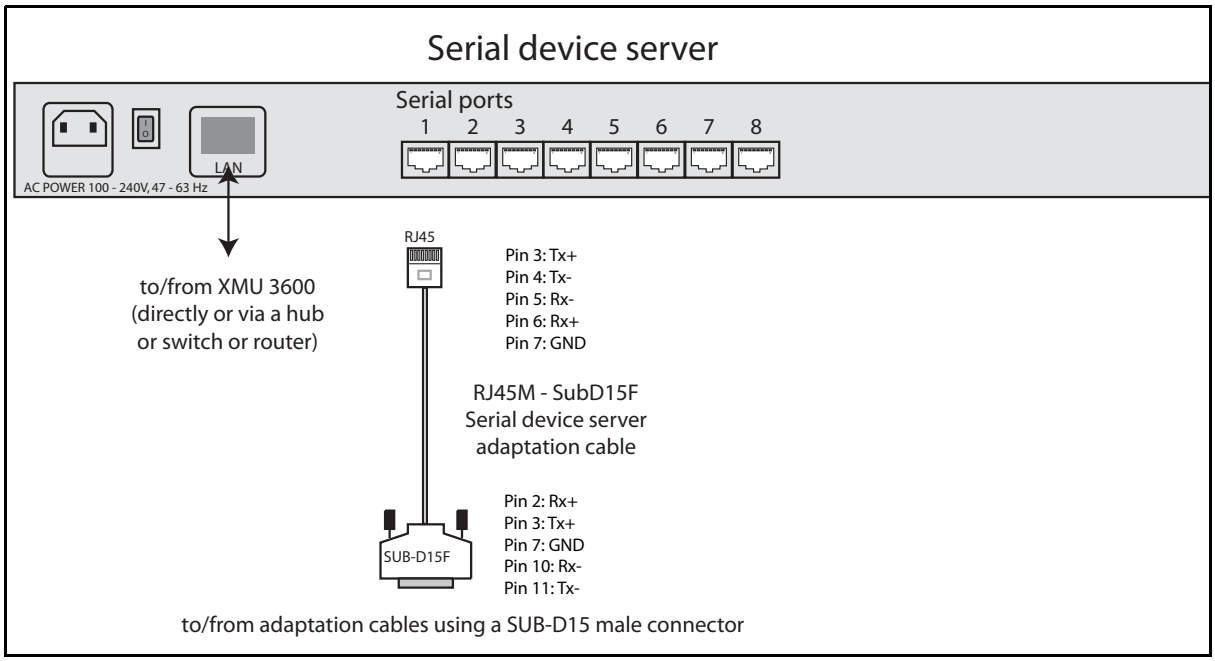
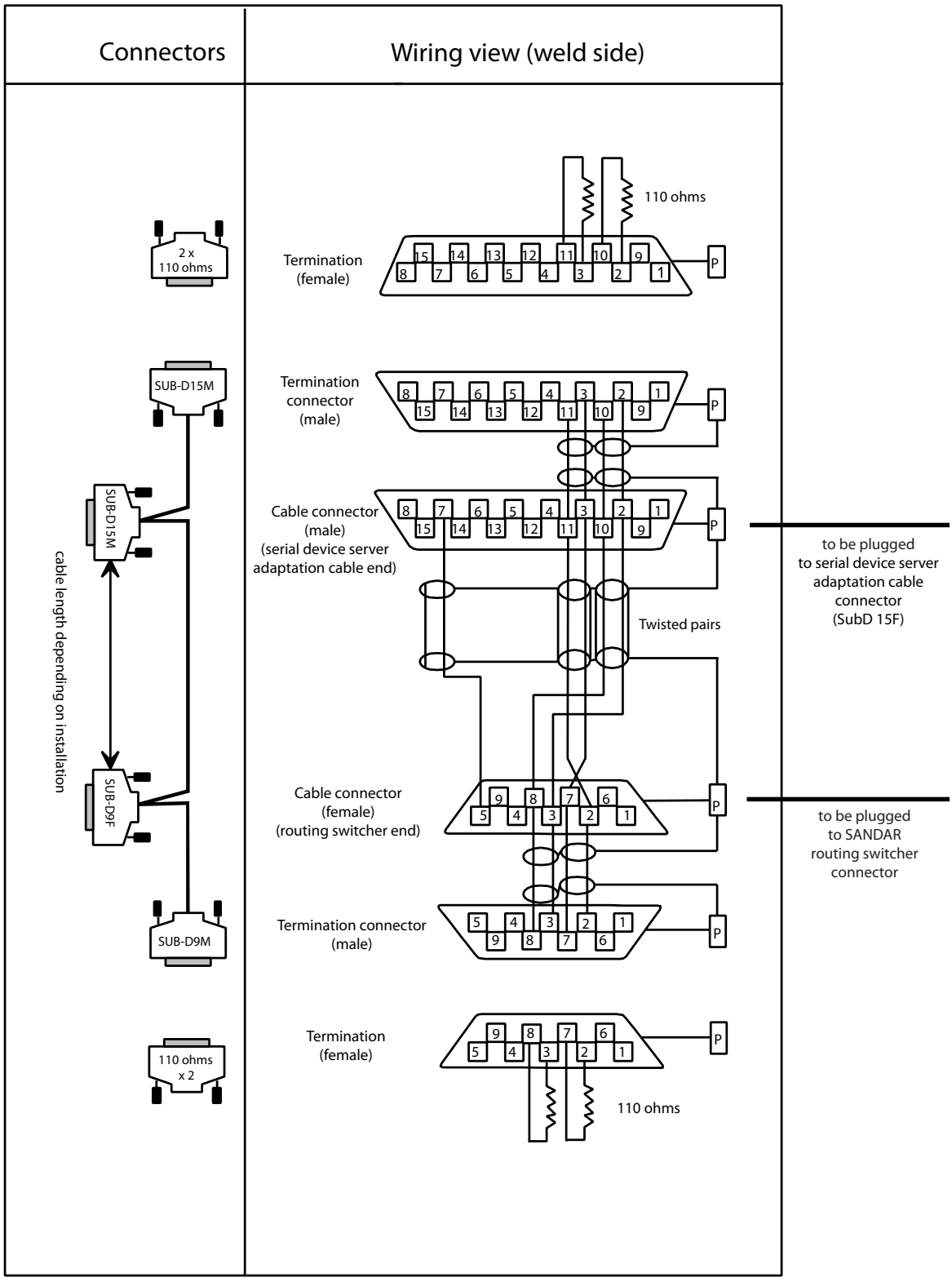
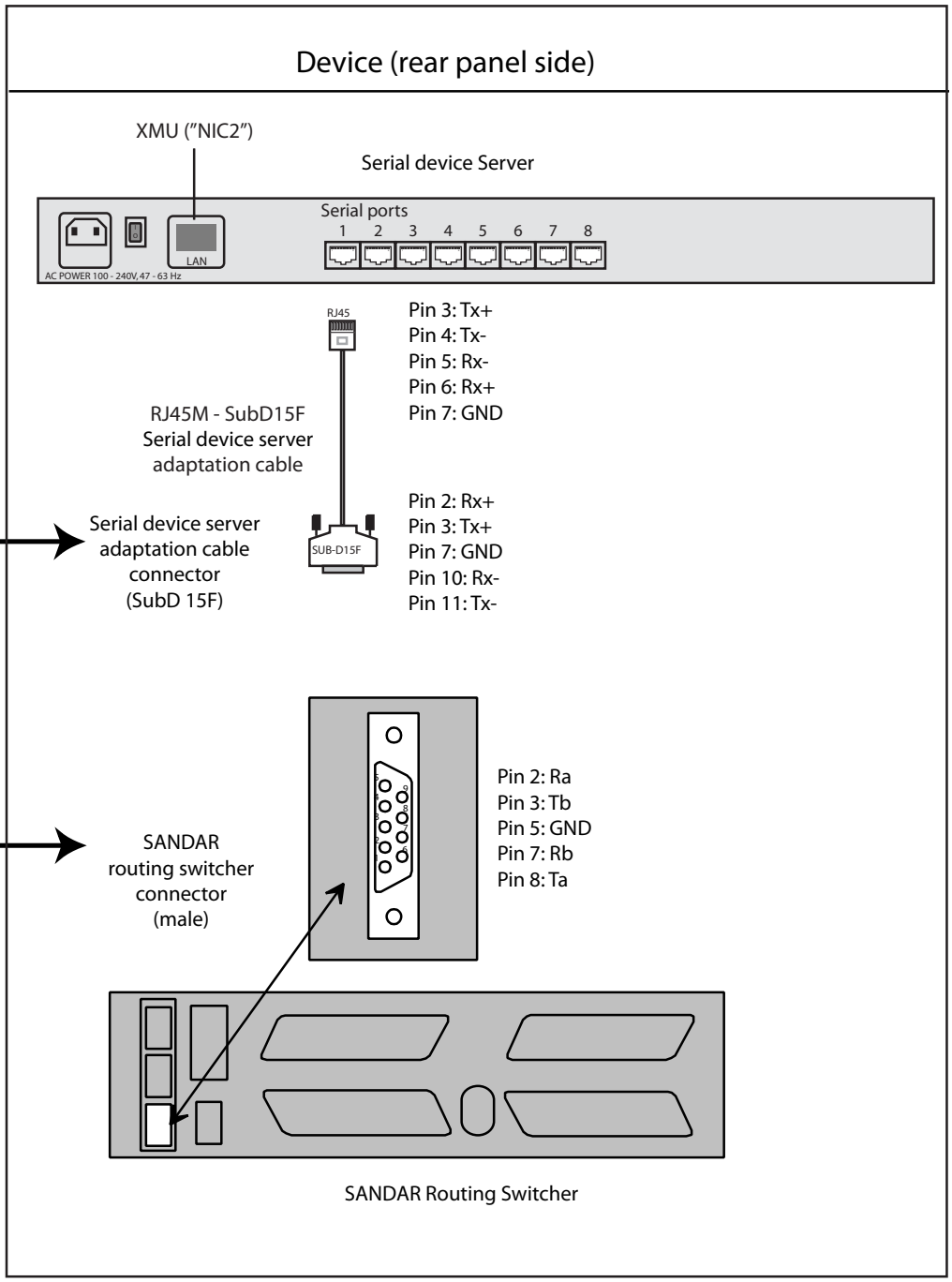


Figure 1.27: Connections to the serial device server

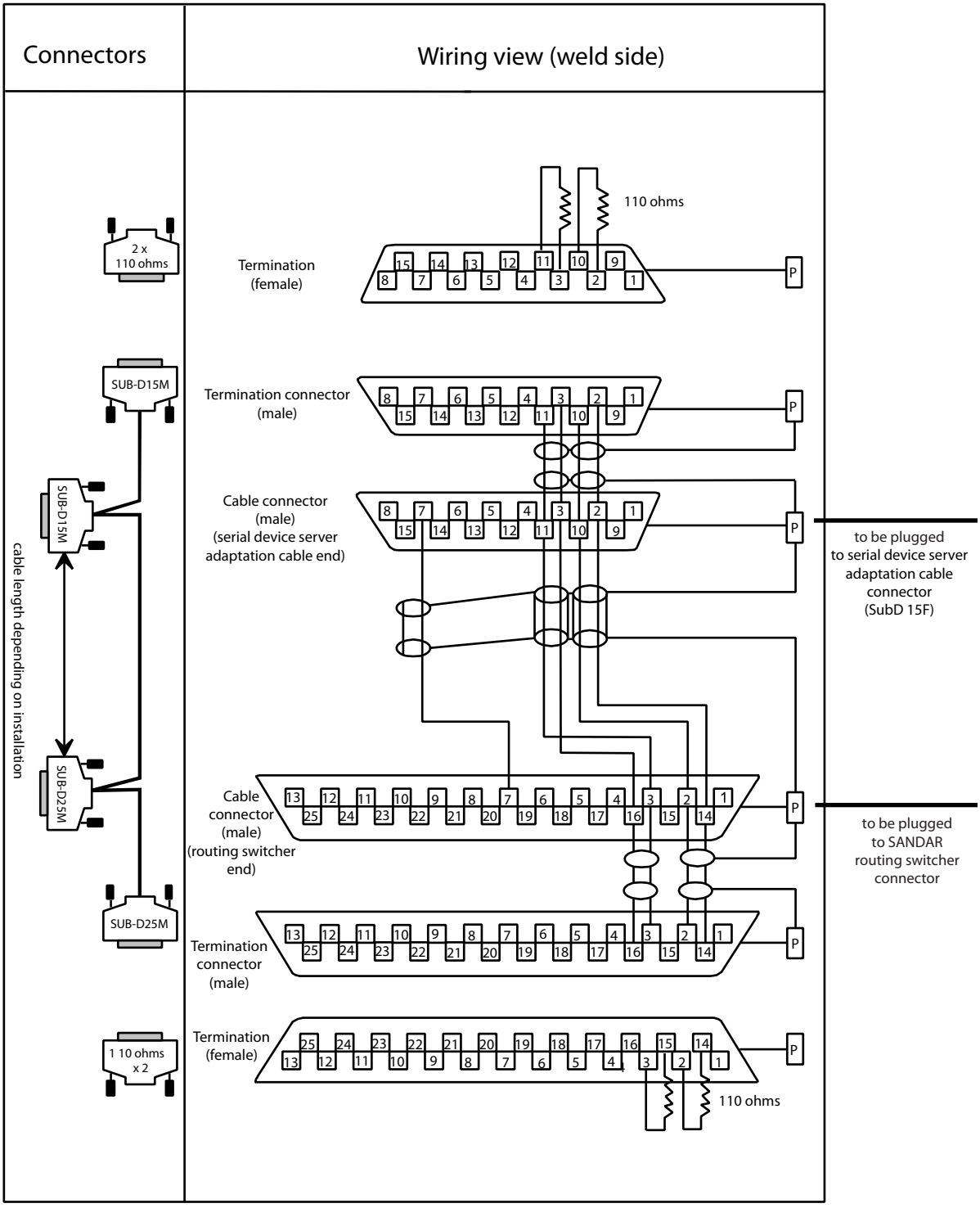
1.6.1.1 - XMU - SANDAR routing switcher (9-pin)

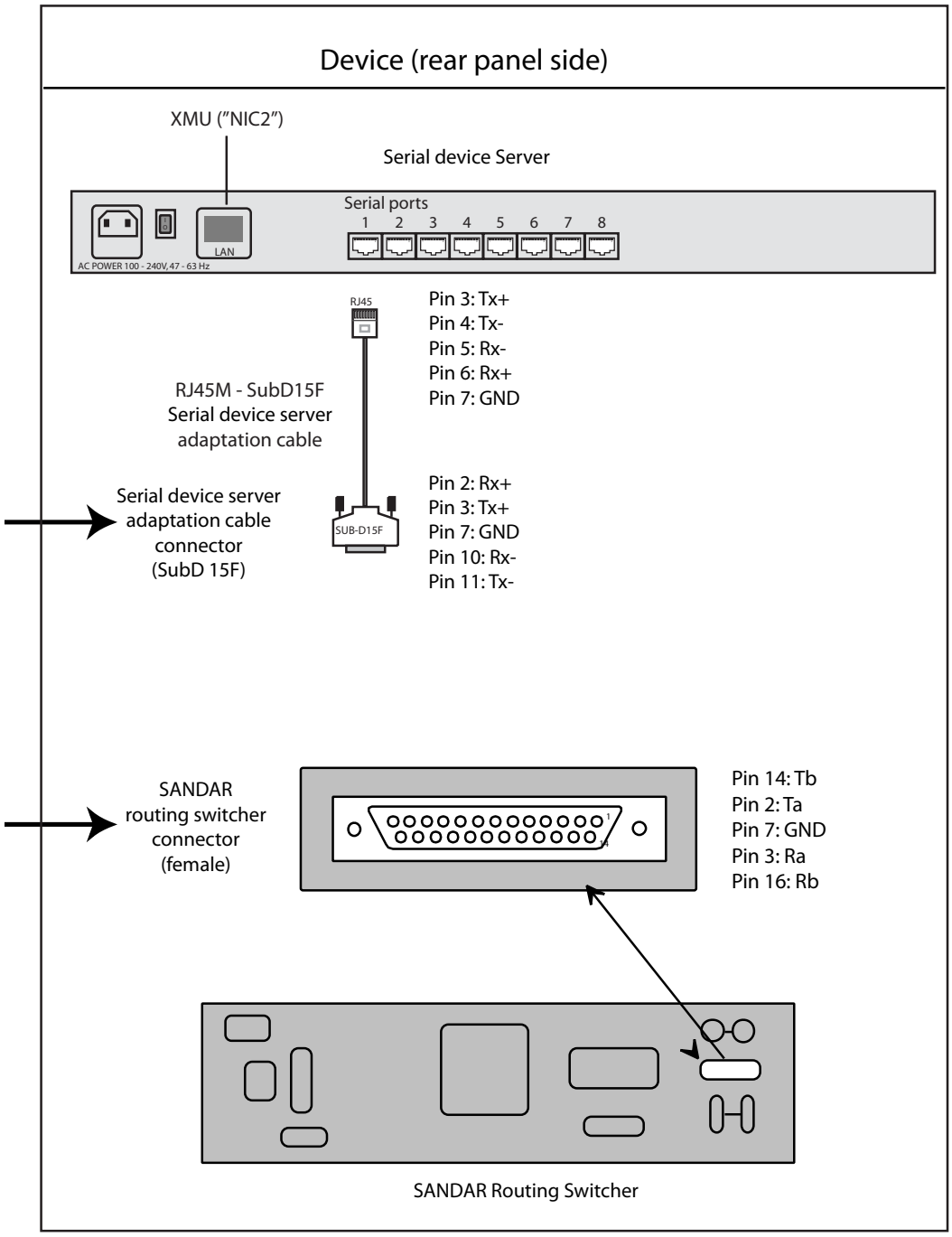
An XMU serial connector can be linked to only one Sandar Switcher.




Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
SANDAR
routing switcher
connector
(male)
Pin 2: Ra
Pin 3: Tb
Pin 5: GND
Pin 7: Rb
Pin 8: Ta
SANDAR Routing Switcher

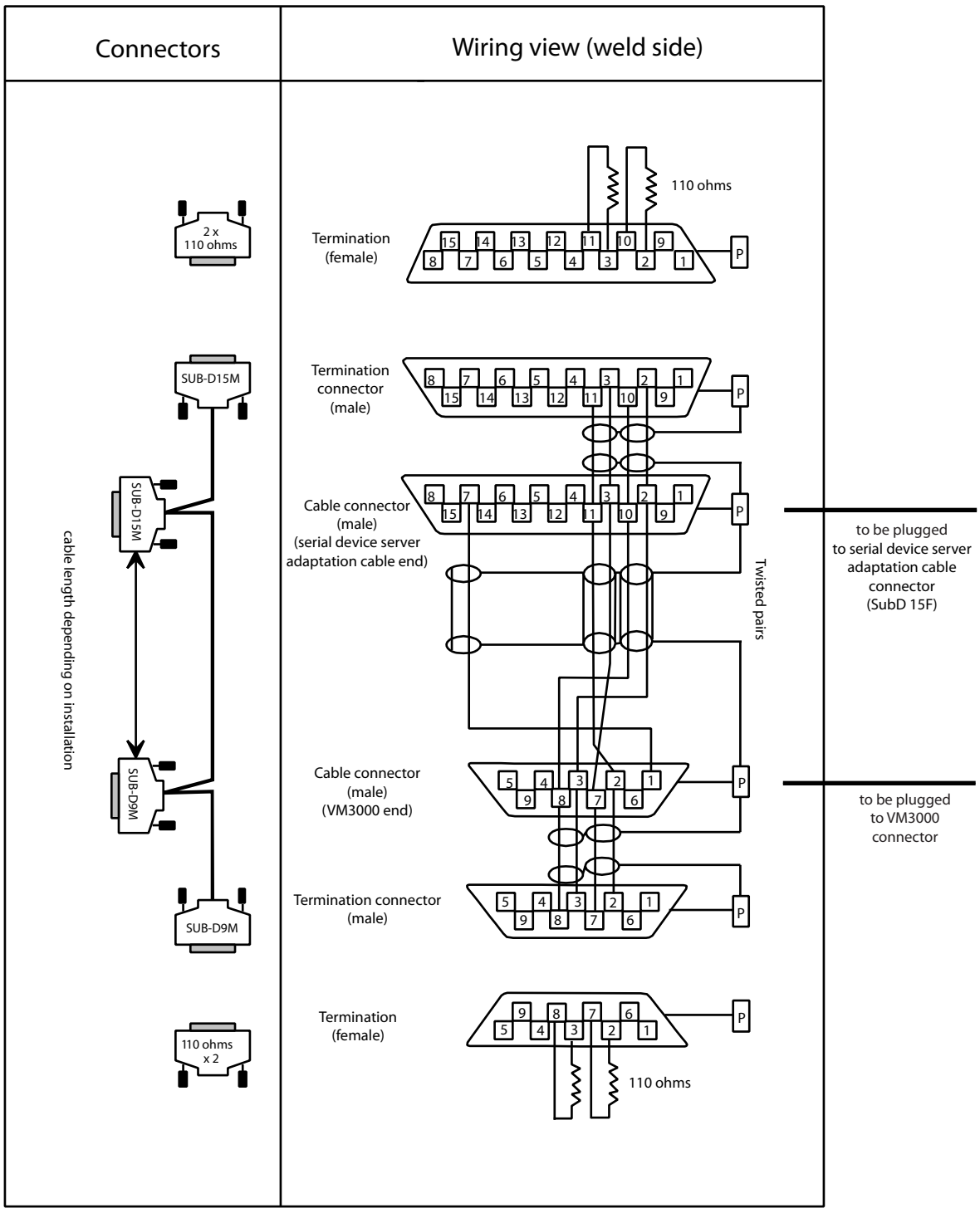
1.6.1.2 - XMU - SANDAR routing switcher (25-pin)

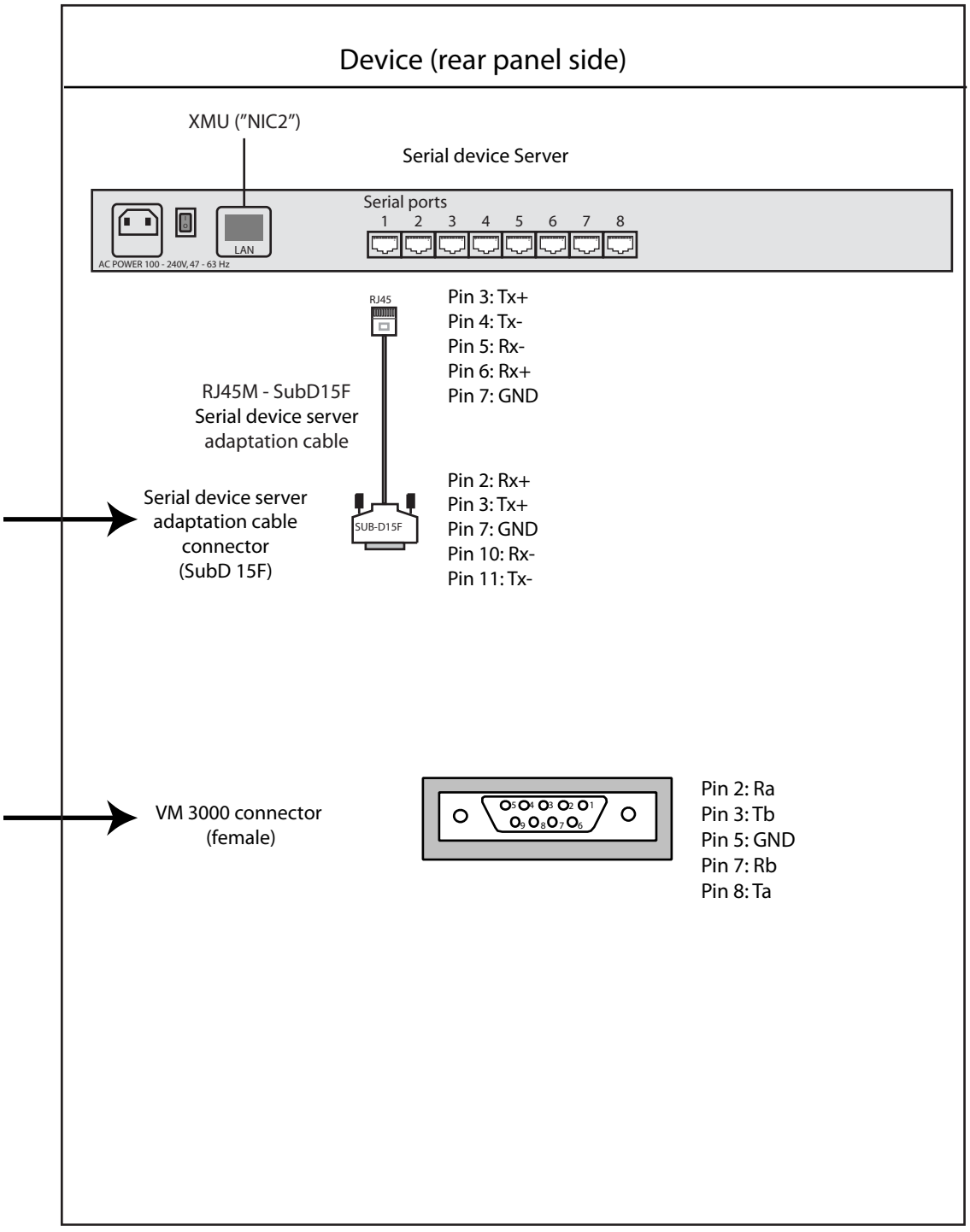



Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
SANDAR
routing switcher
connector
(female)
Pin 14: Tb
Pin 2: Ta
Pin 7: GND
Pin 3: Ra
Pin 16: Rb
SANDAR Routing Switcher

1.6.1.3 - XMU - Grass Valley routing switcher via VM3000

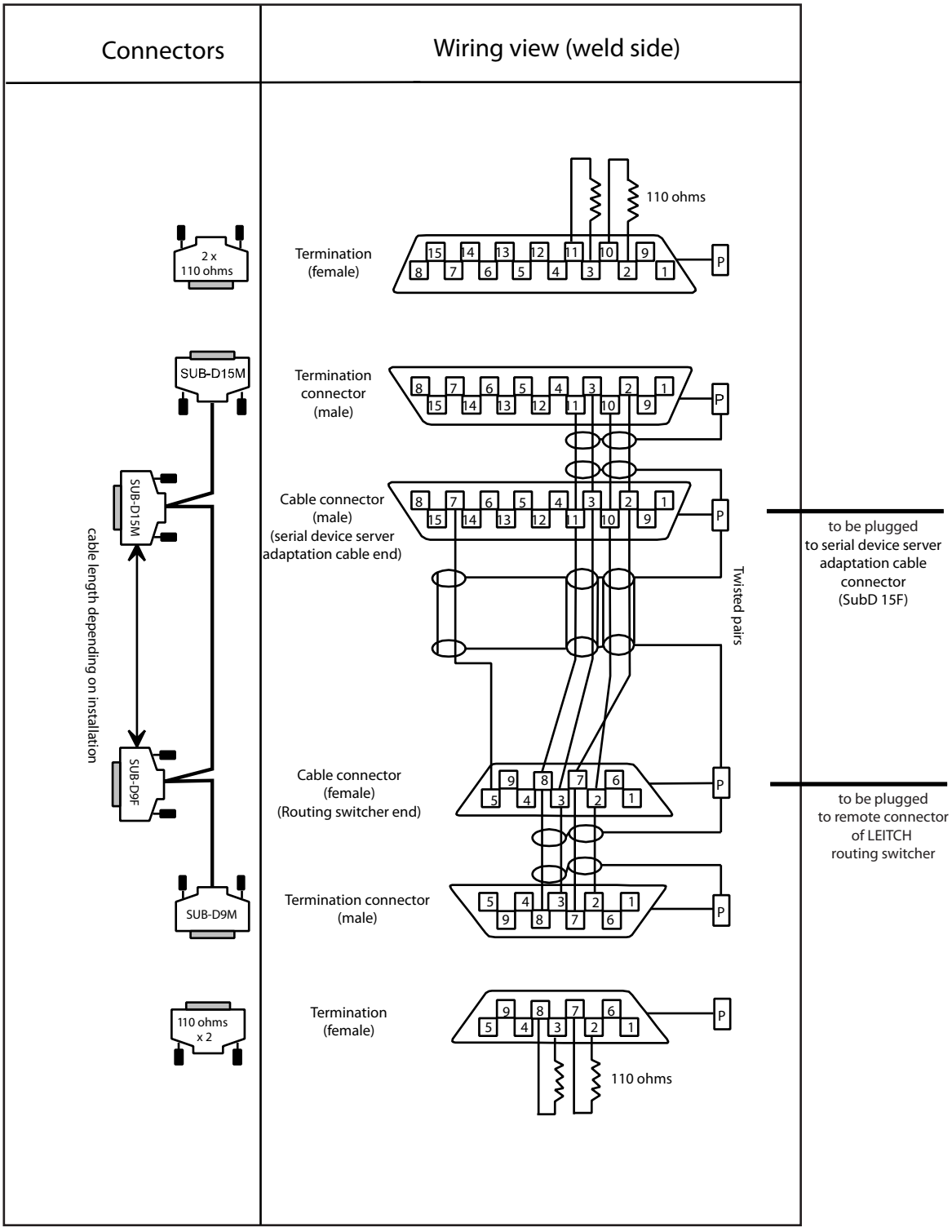
An XMU serial connector can be linked to only one Grass Valley VM 3000 router controller.

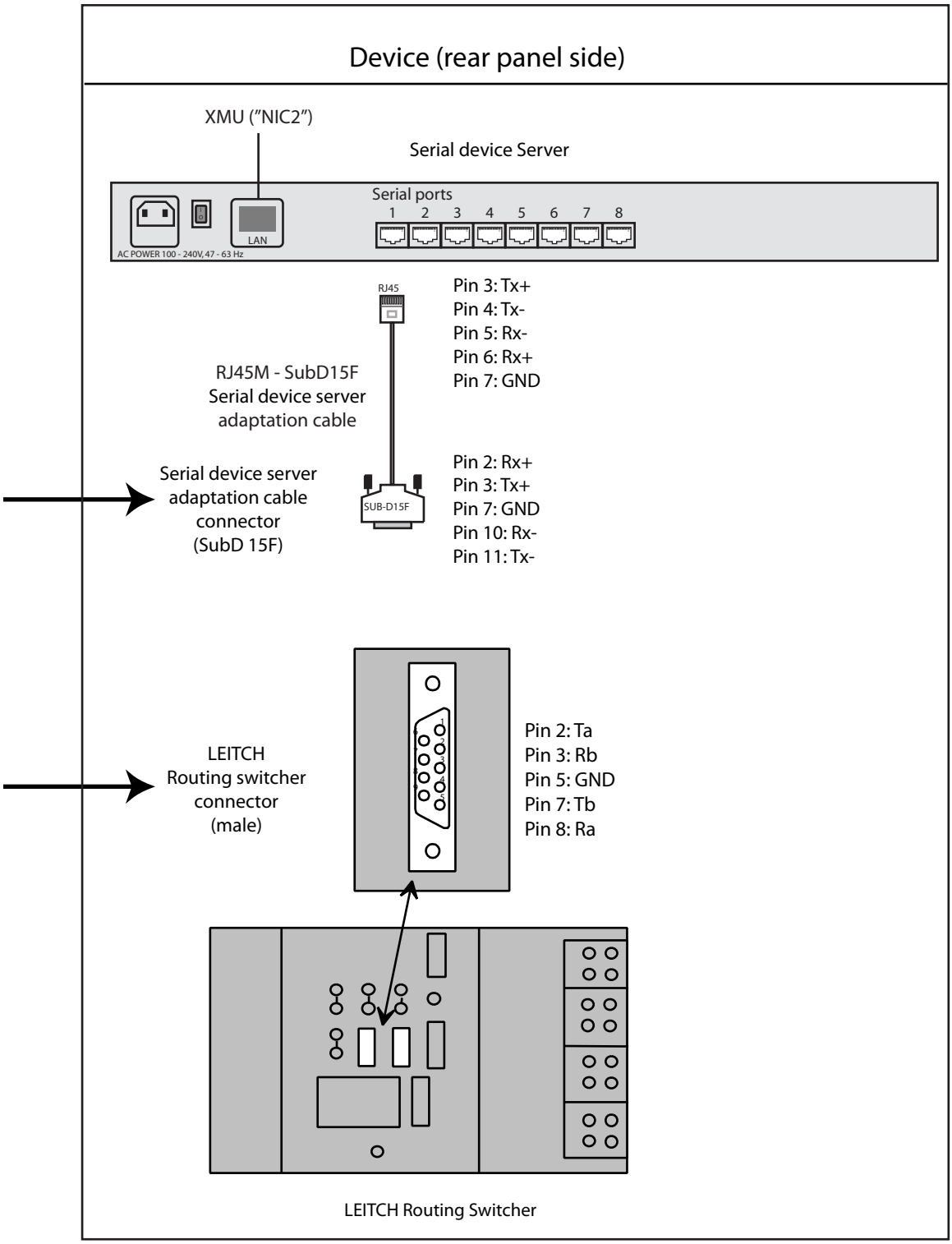



Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
VM 3000 connector
(female)
Pin 2: Ra
Pin 3: Tb
Pin 5: GND
Pin 7: Rb
Pin 8: Ta

1.6.1.4 - XMU - LEITCH routing switcher

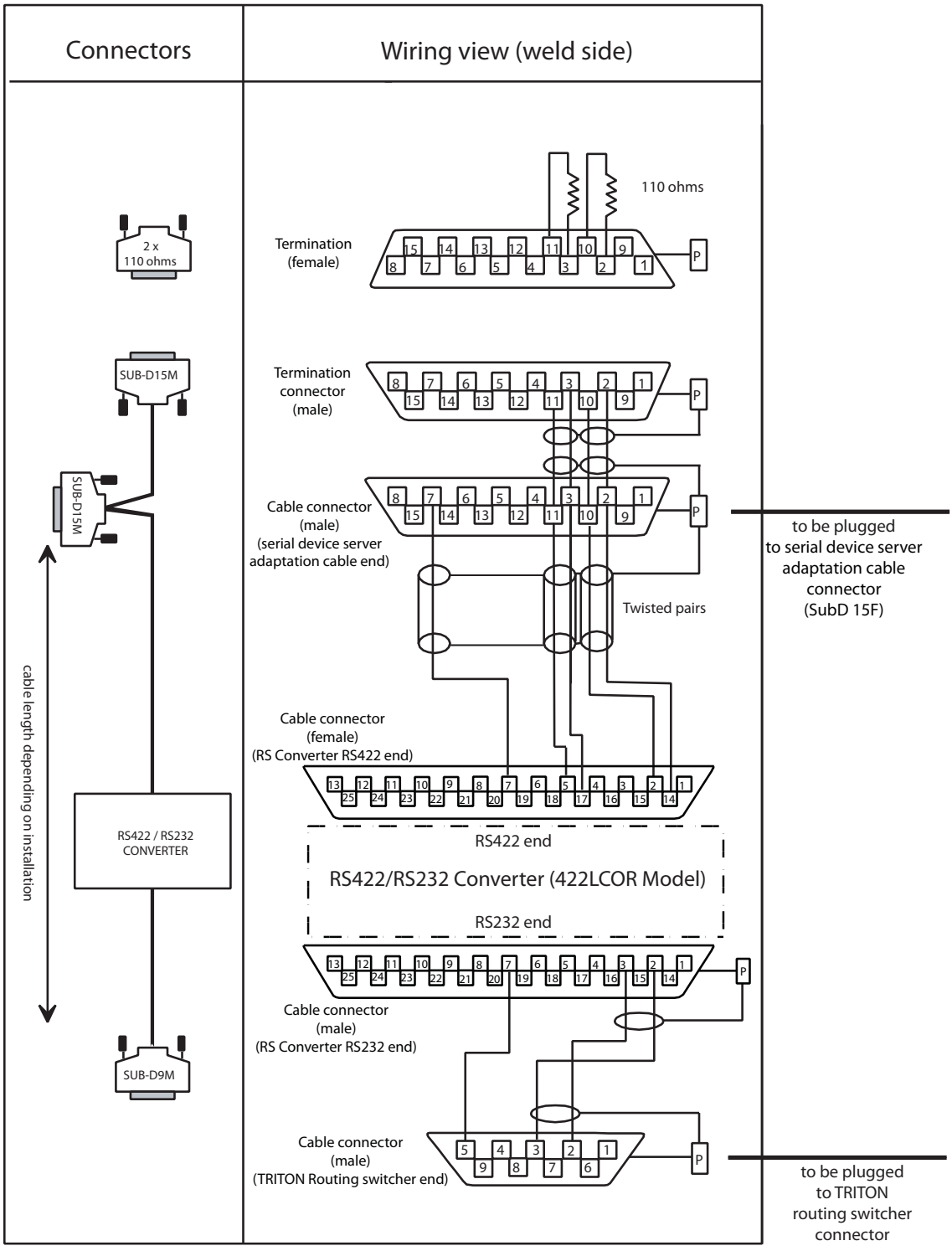
An XMU serial connector can be linked to only one LEITCH router unit.

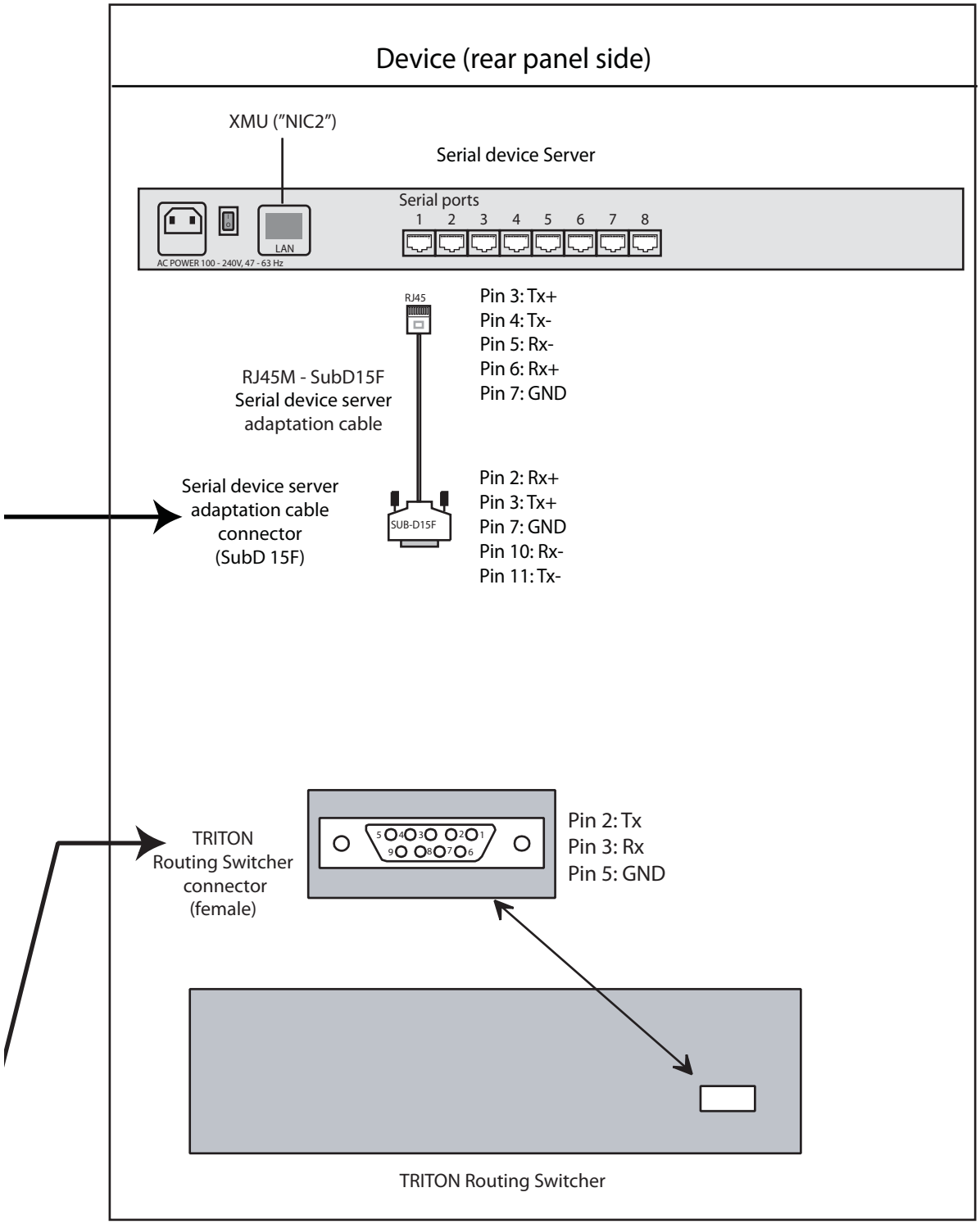



Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
LEITCH
Routing switcher
connector
(male)
Pin 2: Ta
Pin 3: Rb
Pin 5: GND
Pin 7: Tb
Pin 8: Ra
LEITCH Routing Switcher

1.6.1.5 - XMU - TRITON routing switcher

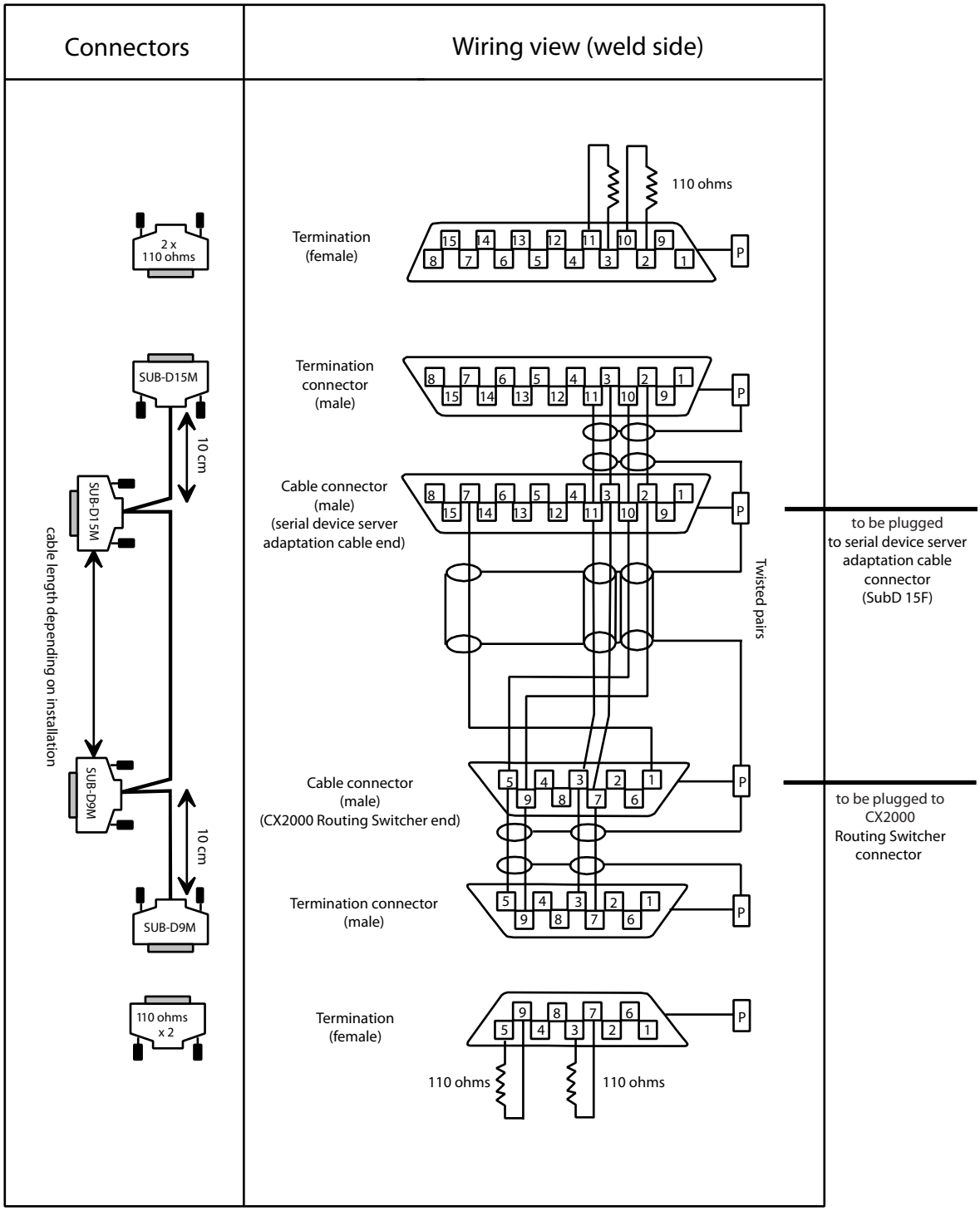
A RS485 to RS232 converter (Model 422LCOR for example) is required for the link to TRITON routing switcher.

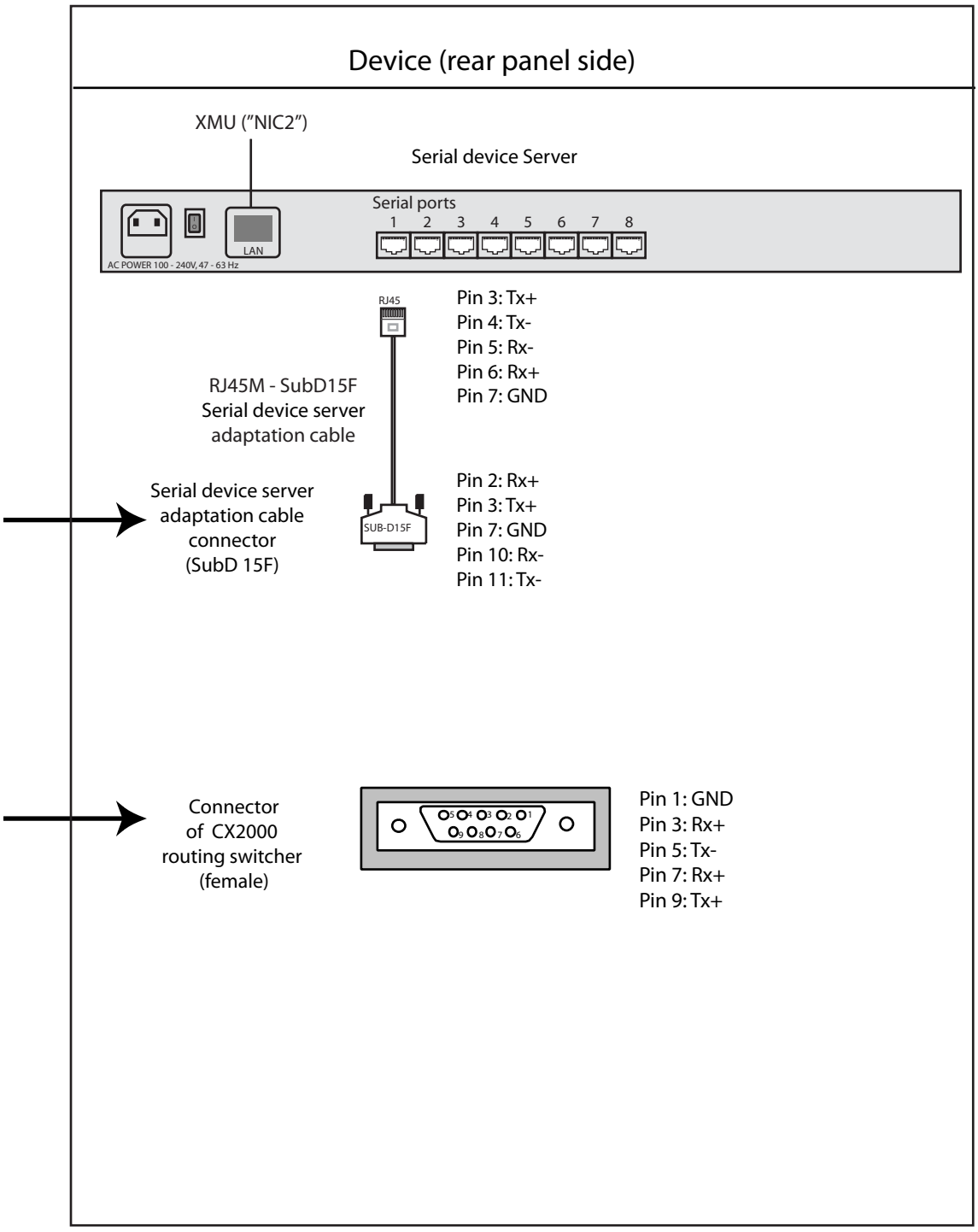



Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
TRITON
Routing Switcher
connector
(female)
Pin 2: Tx
Pin 3: Rx
Pin 5: GND
TRITON Routing Switcher

1.6.1.6 - XMU - CX 2000 routing switcher

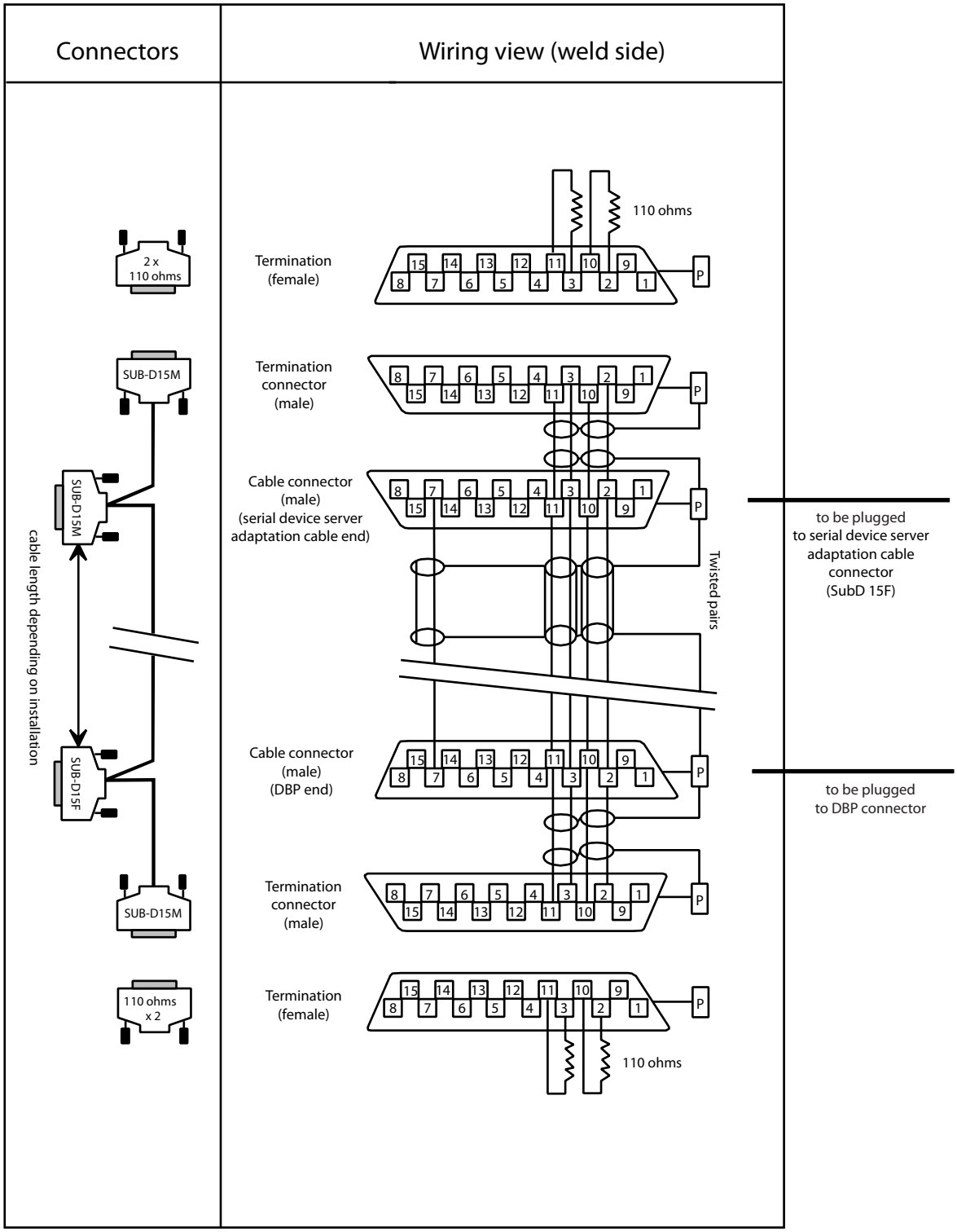
An XMU serial connector can be linked to only one CX2000 routing switcher.

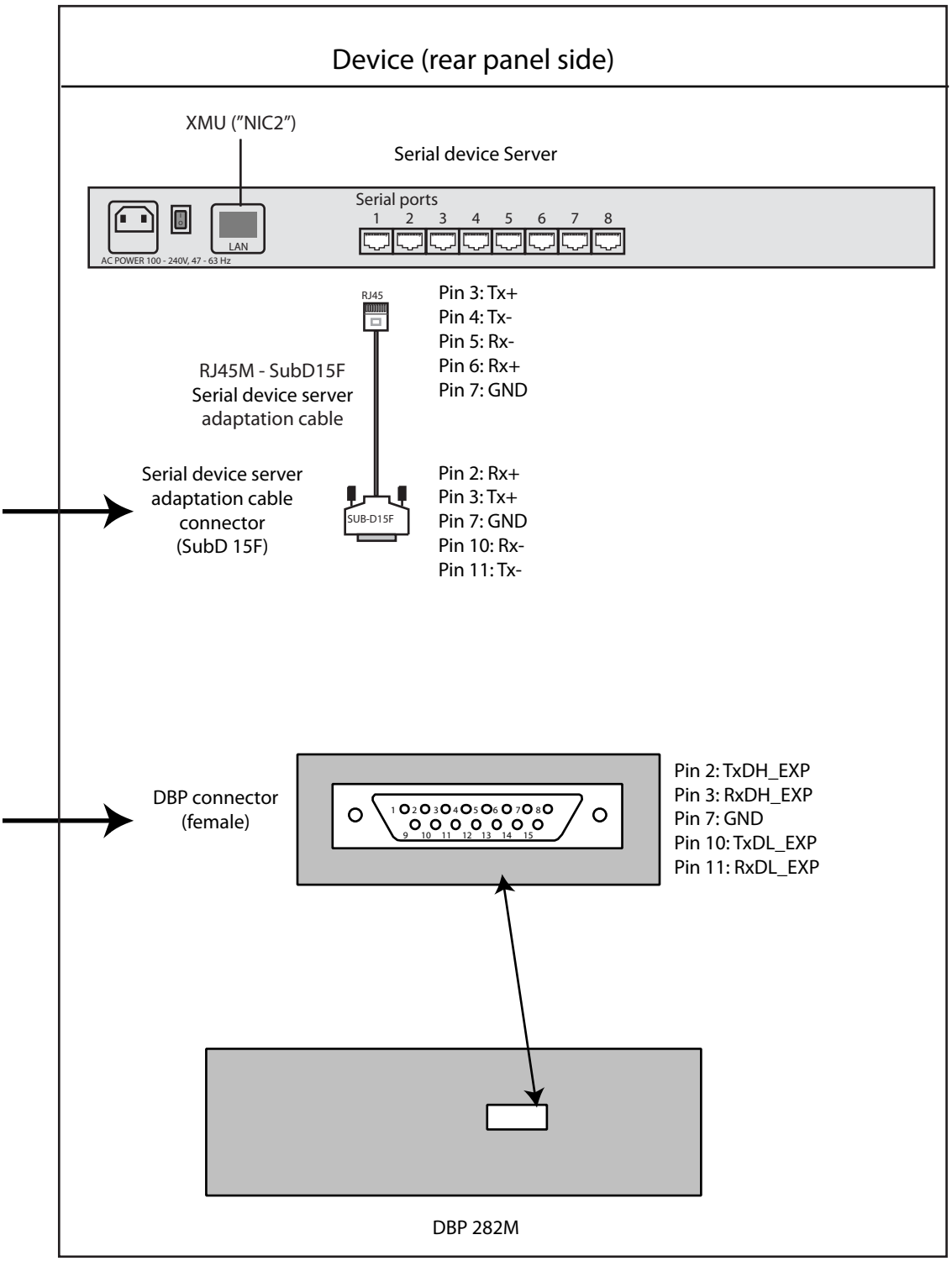



Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
Connector
of CX2000
routing switcher
(female)
Pin 1: GND
Pin 3: Rx+
Pin 5: Tx-
Pin 7: Rx+
Pin 9: Tx+

1.6.1.7 - XMU - DBP 282M switch

An XMU serial connector can be linked to several DBP devices.

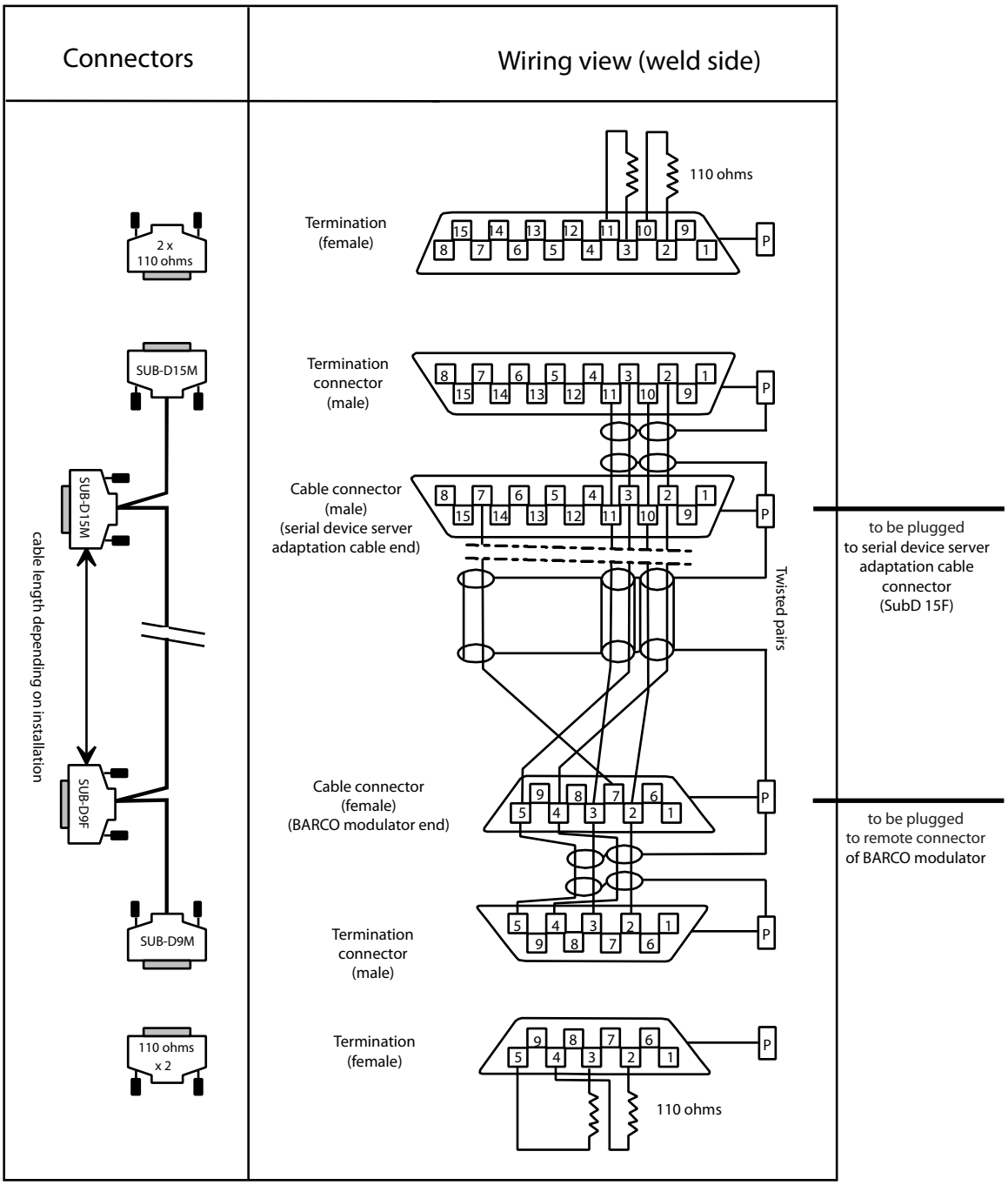


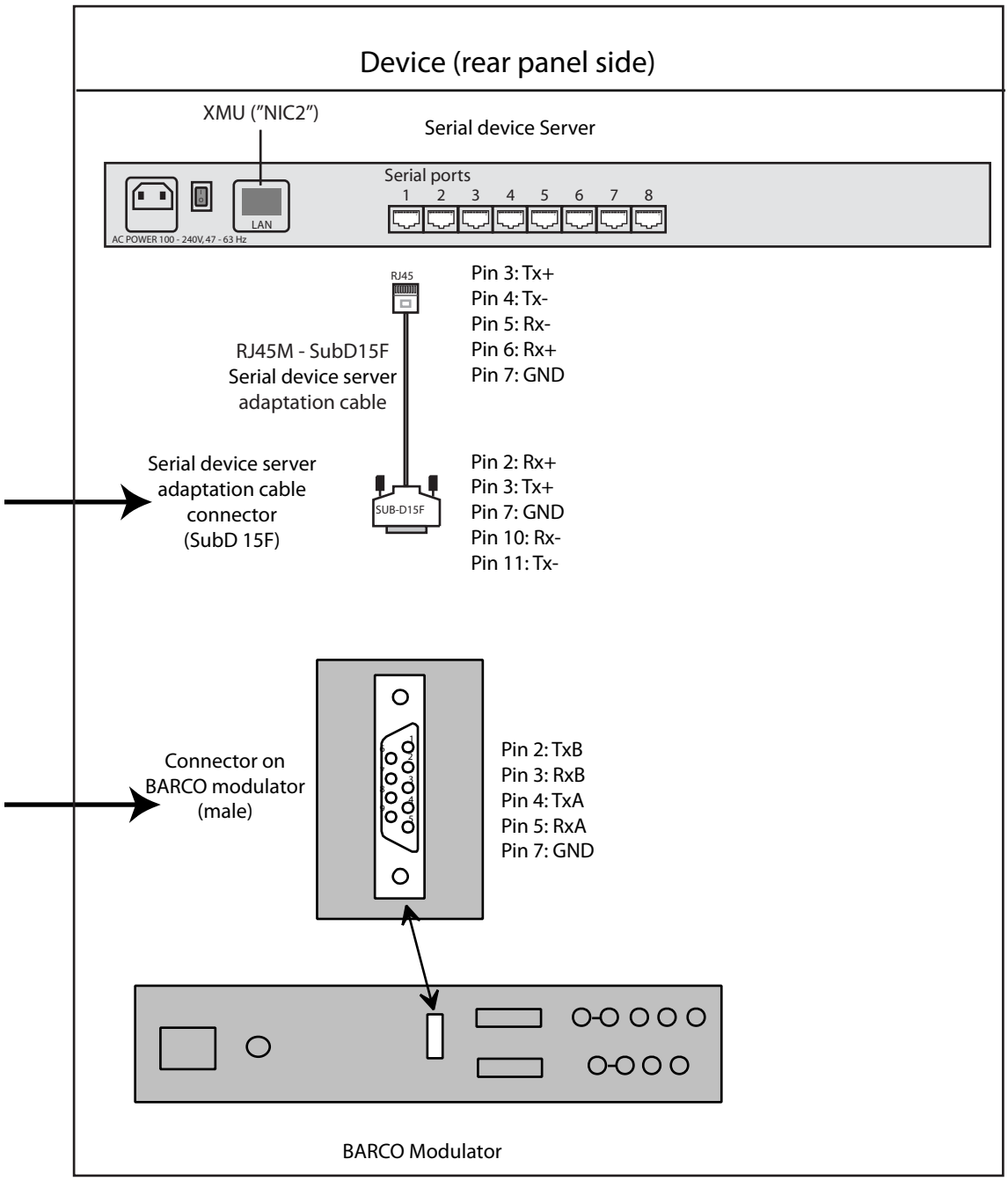

Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
DBP connector
(female)
Pin 2: TxDH_EXP
Pin 3: RxDH_EXP
Pin 7: GND
Pin 10: TxDL_EXP
Pin 11: RxDL_EXP
DBP 282M

1.6.1.8 - XMU - BARCO and NEWTEC modulators

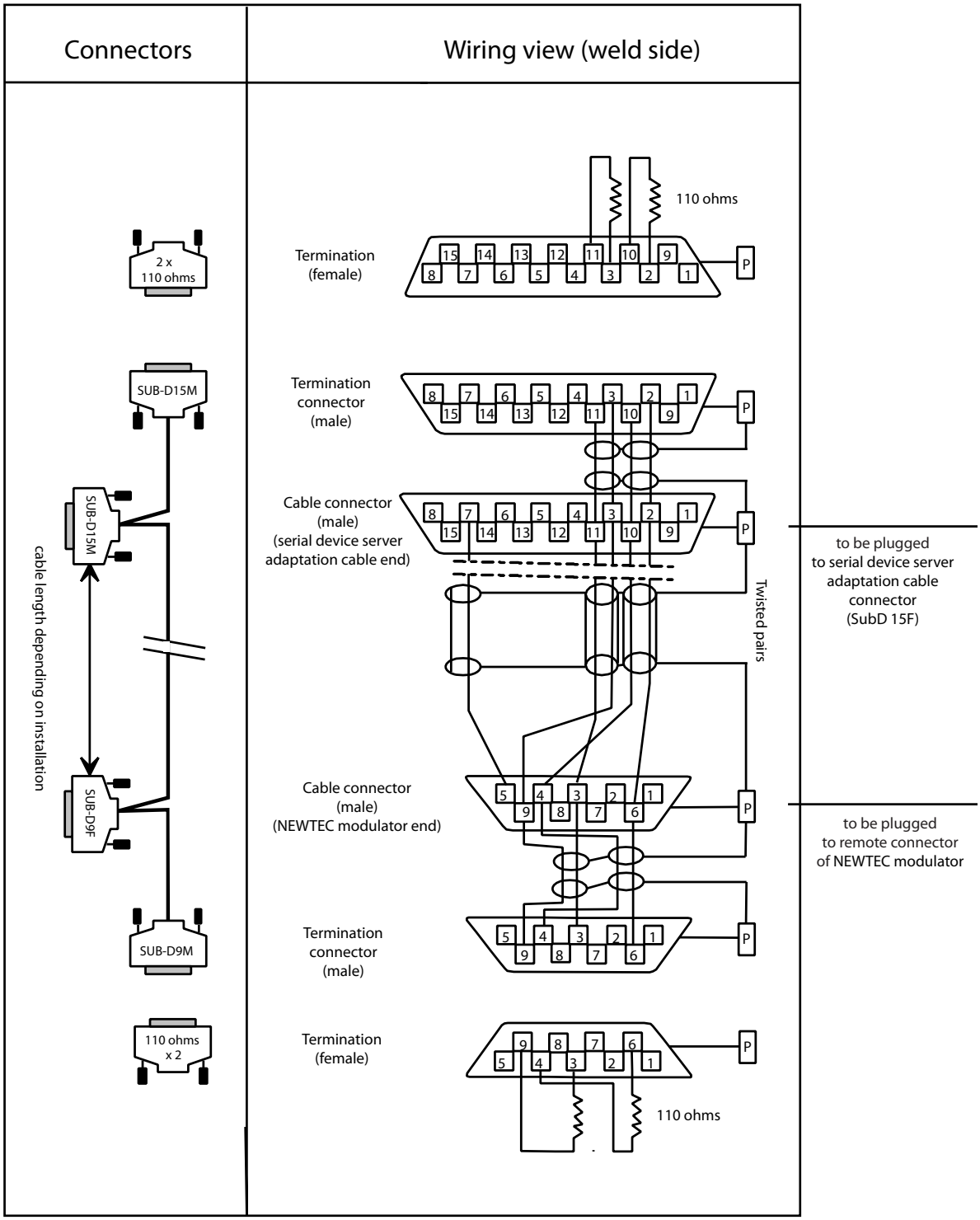
An XMU serial connector can be connected to several BARCO or NEWTEC devices. As the BARCO and NEWTEC protocols are different, separate, dedicated serial ports must be used for both models.

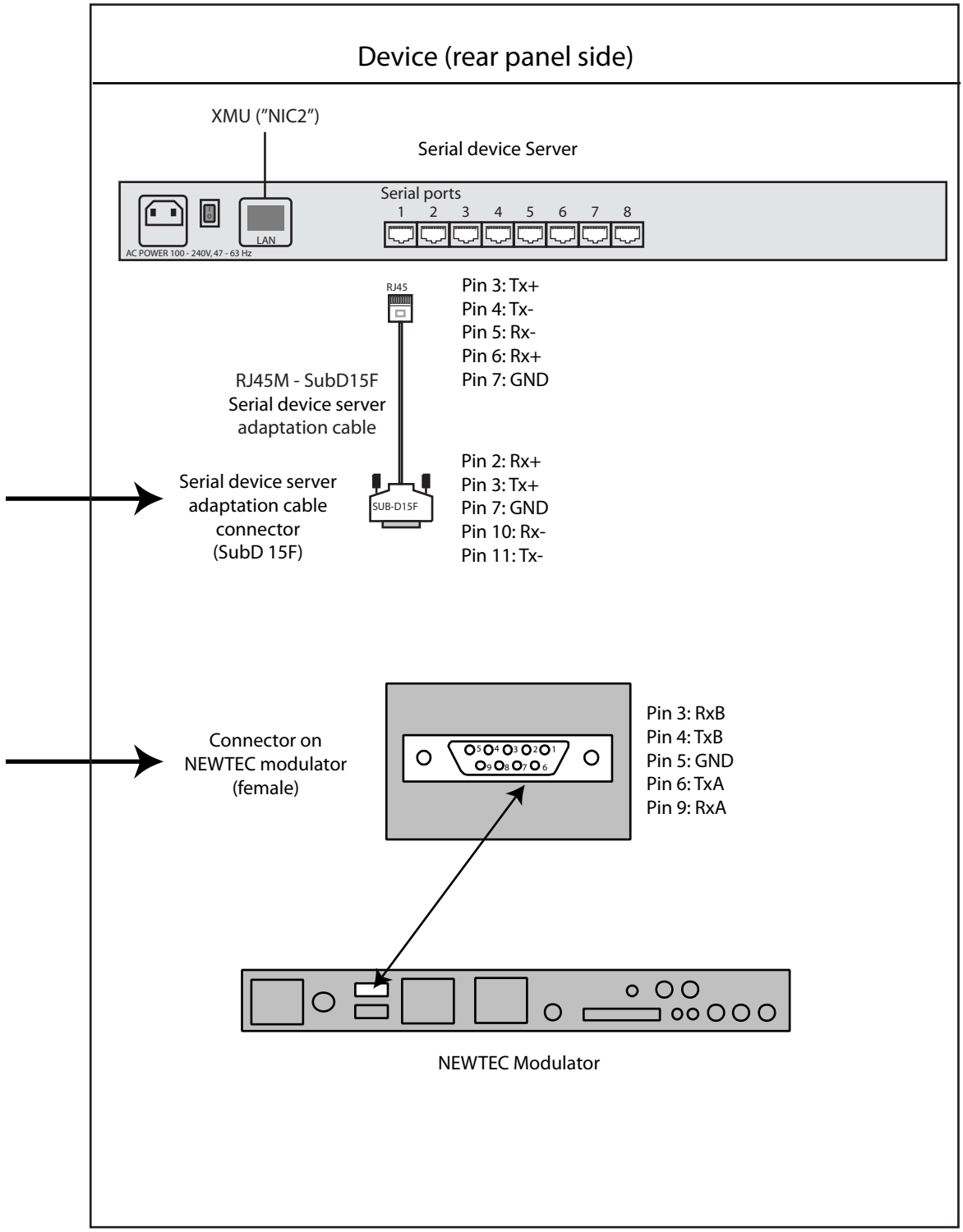
1.6.1.8.1 - XMU - BARCO modulator




Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
Connector on
BARCO modulator
(male)
Pin 2: TxB
Pin 3: RxB
Pin 4: TxA
Pin 5: RxA
Pin 7: GND
BARCO Modulator

1.6.1.8.2 - XMU - NEWTEC modulator

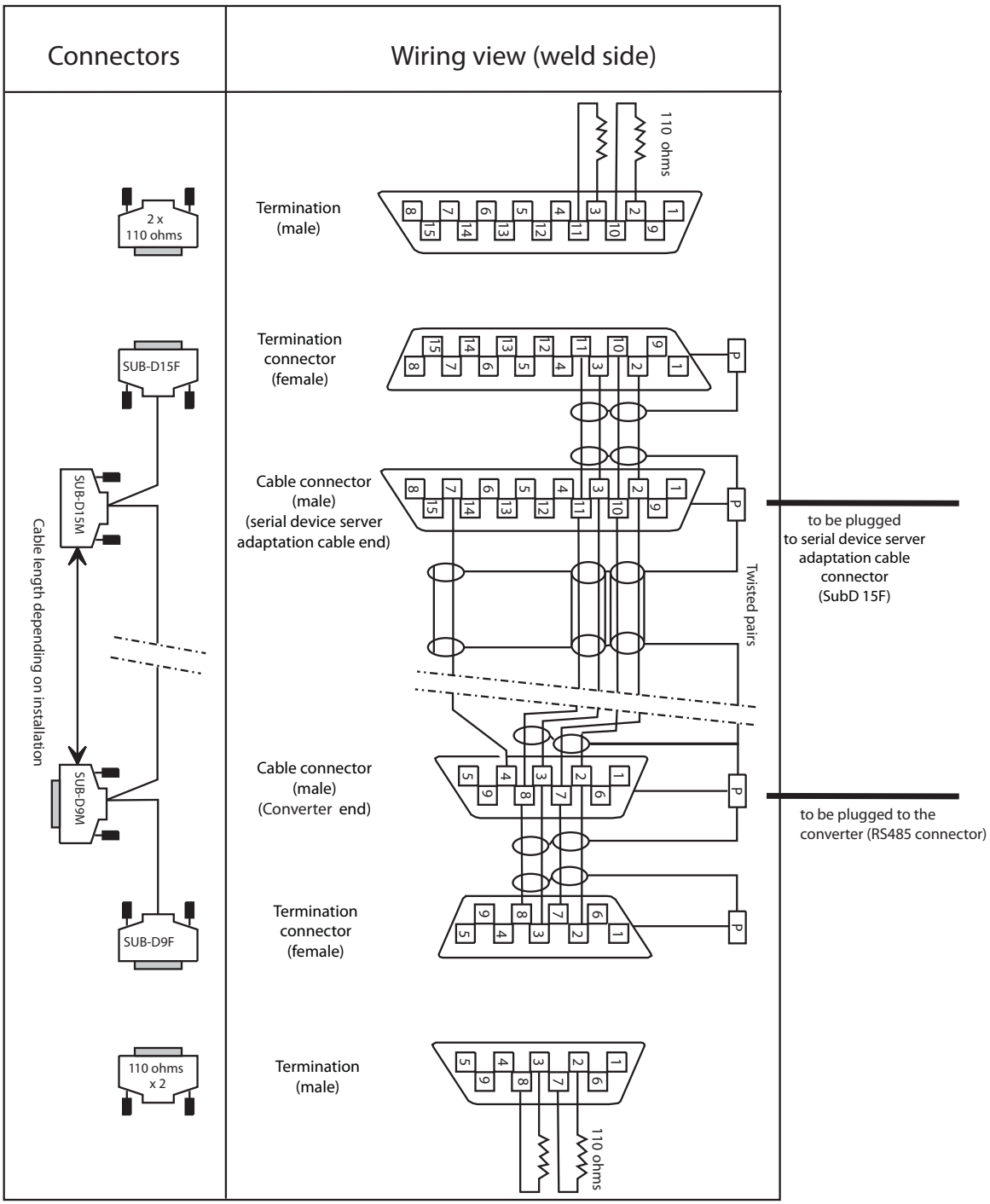


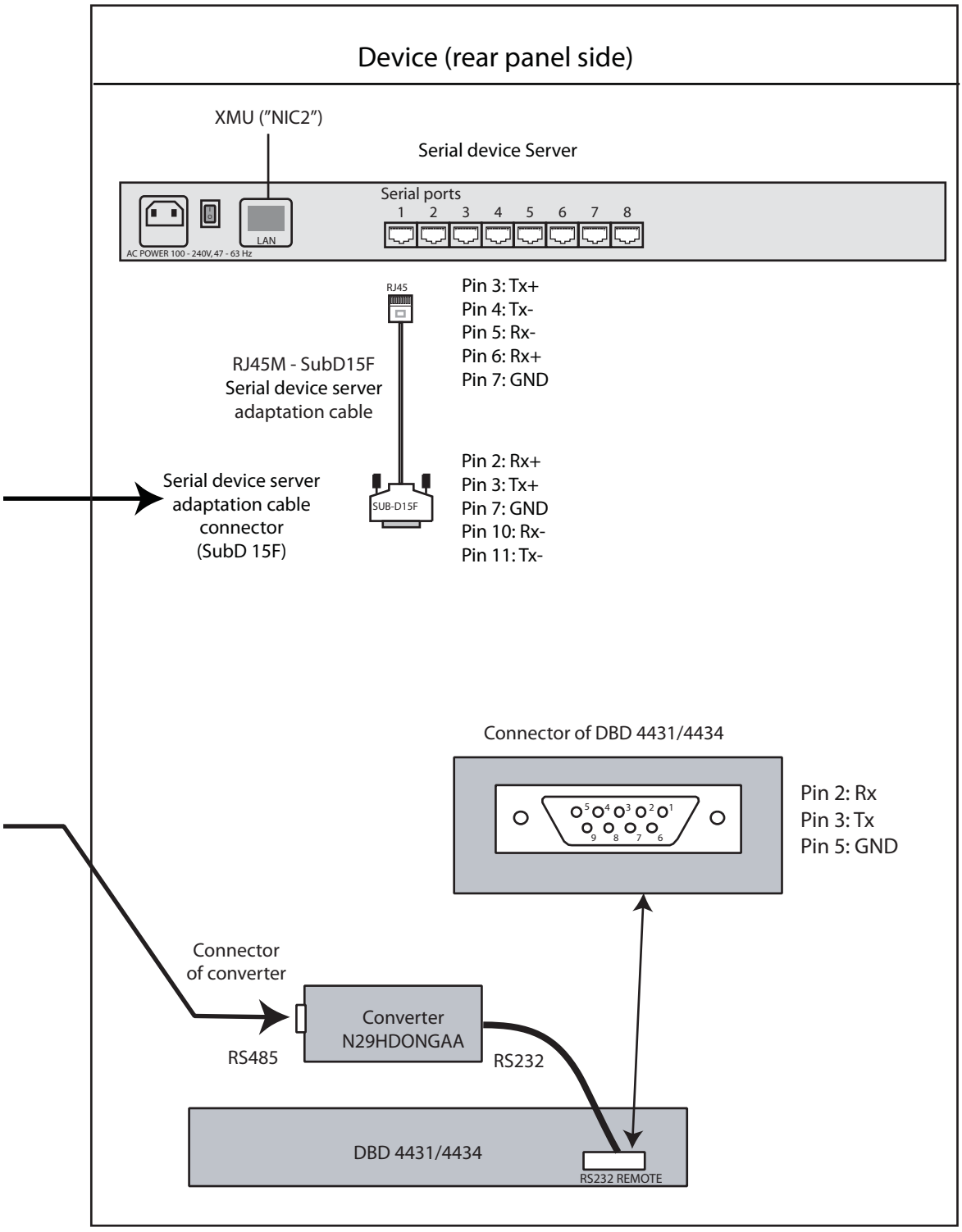

Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
Connector on
NEWTEC modulator
(female)
Pin 3: RxB
Pin 4: TxB
Pin 5: GND
Pin 6: TxA
Pin 9: RxA
NEWTEC Modulator

1.6.1.9 - XMU - DBD4431/4434 decoders

1.6.1.9.1 - Point to point link

Point to point link: an XMU serial port is used for one decoder with the RS485 to RS232 converter (reference N29HDONGAA).

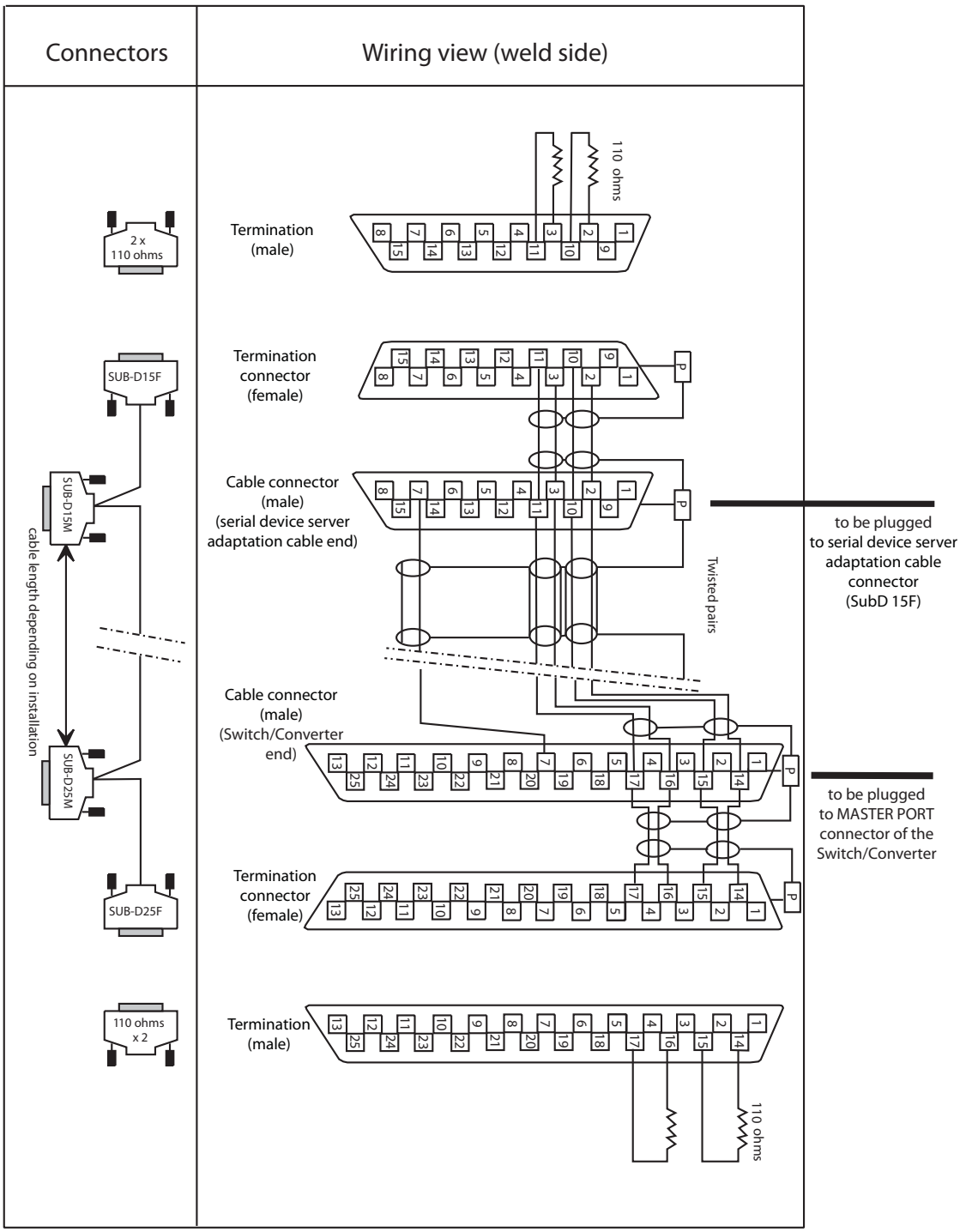


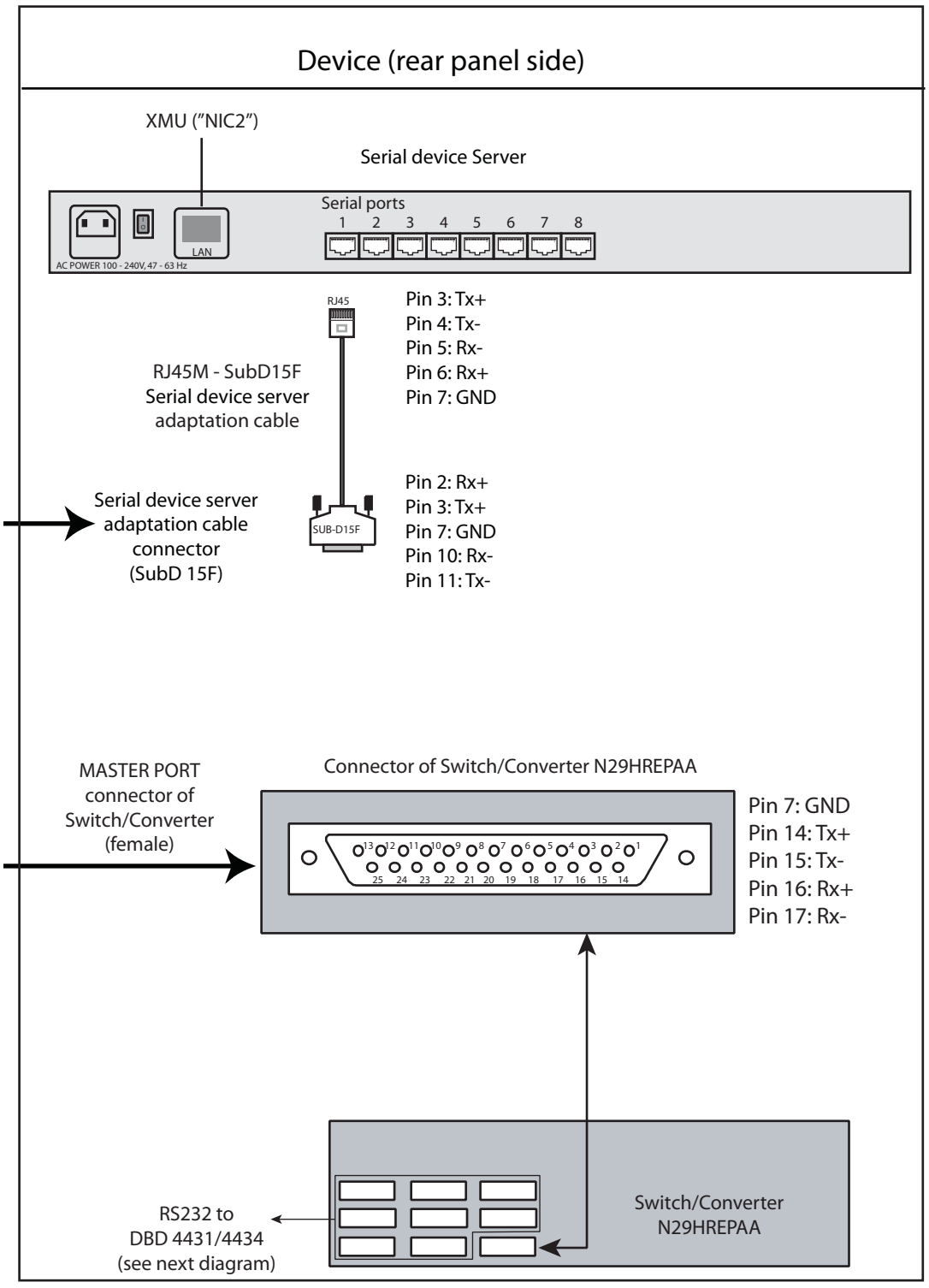

Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
Connector of DBD 4431/4434
Pin 2: Rx
Pin 3: Tx
Pin 5: GND
Connector
of converter
Converter
N29HDONGAA
RS485
RS232
DBD 4431/4434
RS232 REMOTE

1.6.1.9.2 - Multipoint link

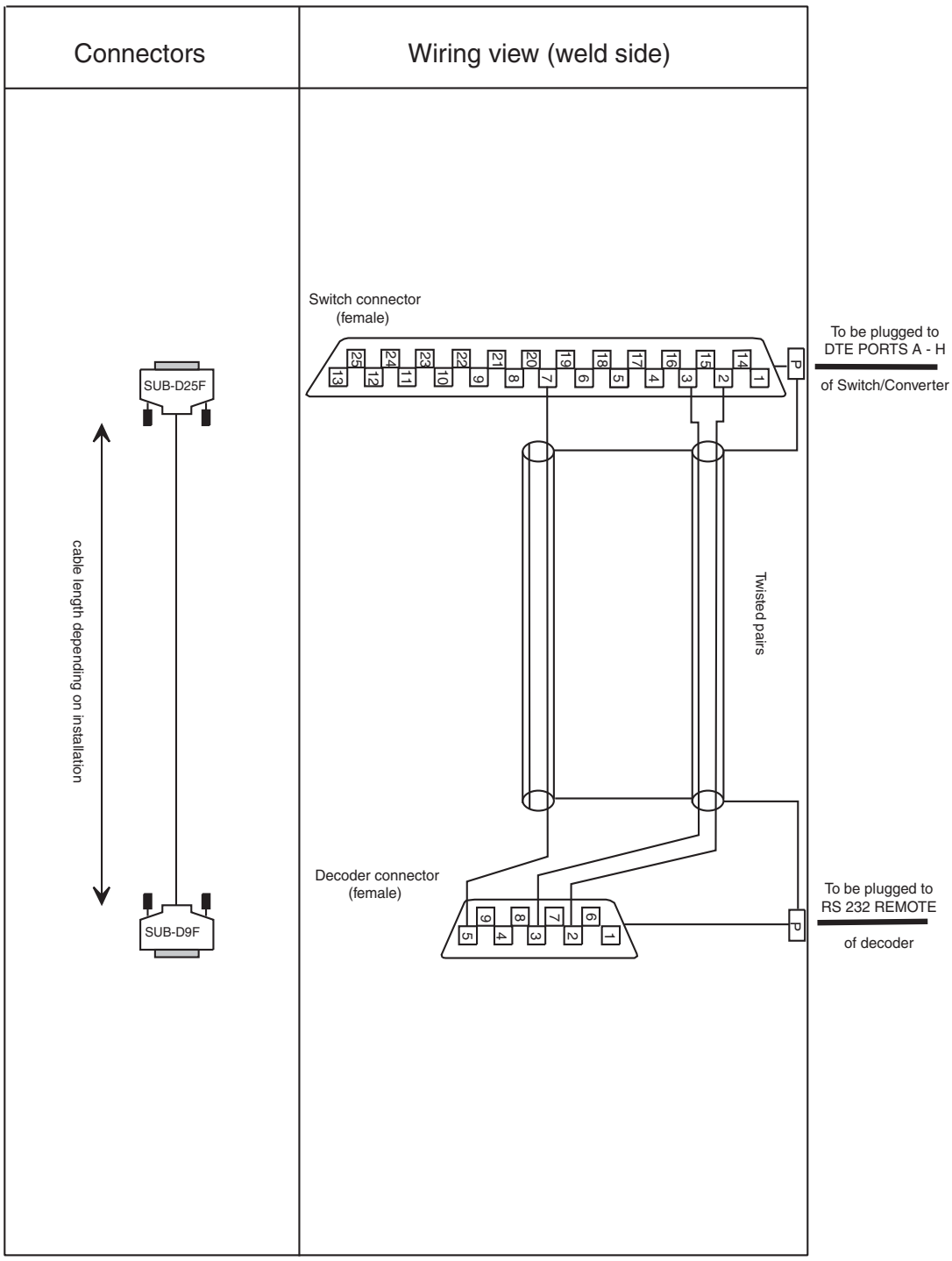
Multipoint link: An XMU serial port is used to manage up to 8 decoders with the RS485 to RS232 switch/converter (reference N29HREPAAA). The reference of the AC Power Supply is N29HPS00AA.

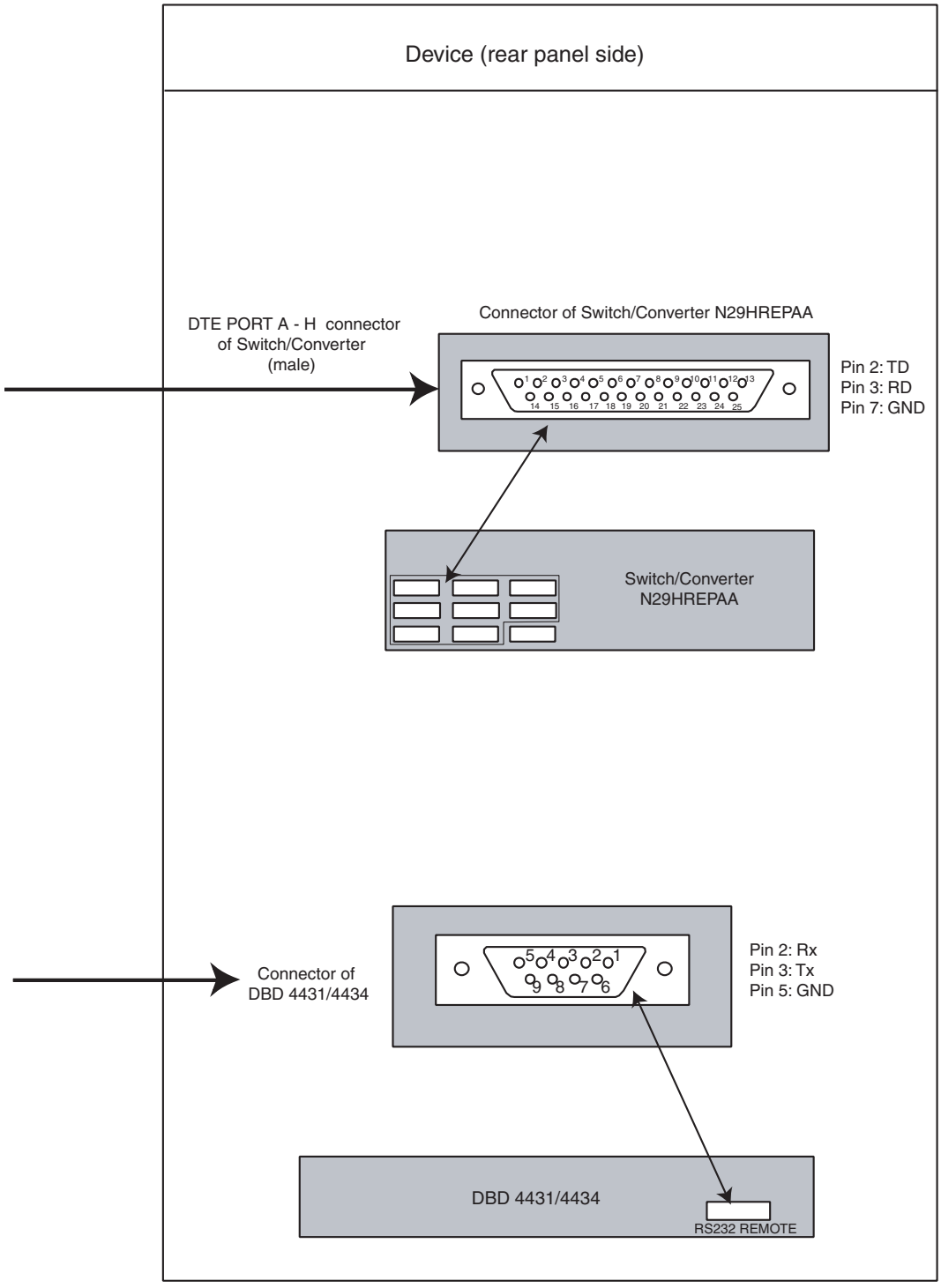
- **XMU - switch/converter cable**




Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
MASTER PORT
connector of
Switch/Converter
(female)
Connector of Switch/Converter N29HREPAA
Pin 7: GND
Pin 14: Tx+
Pin 15: Tx-
Pin 16: Rx+
Pin 17: Rx-
RS232 to
DBD 4431/4434
(see next diagram)
Switch/Converter
N29HREPAA

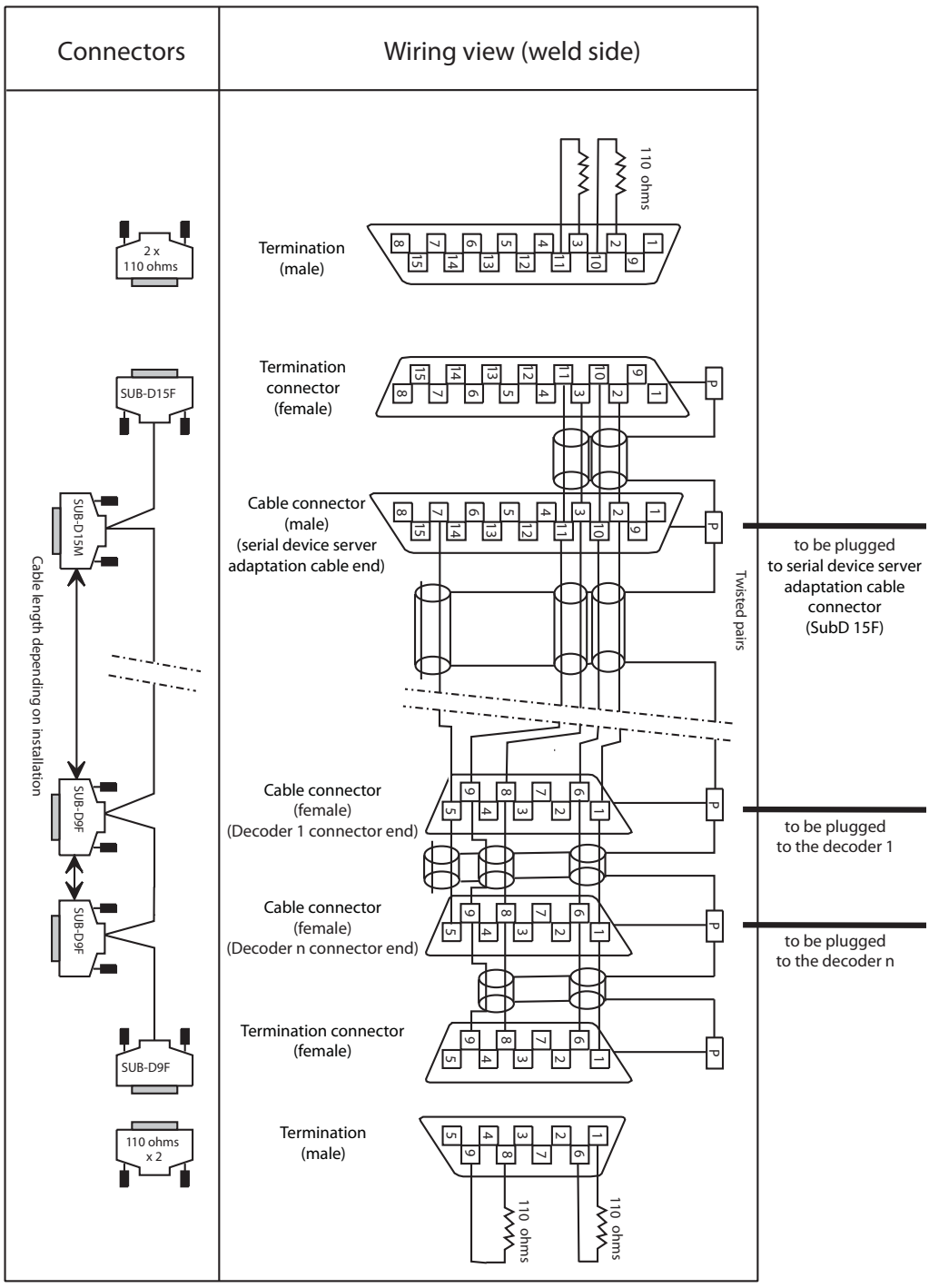
- **Switch - Decoder cable**

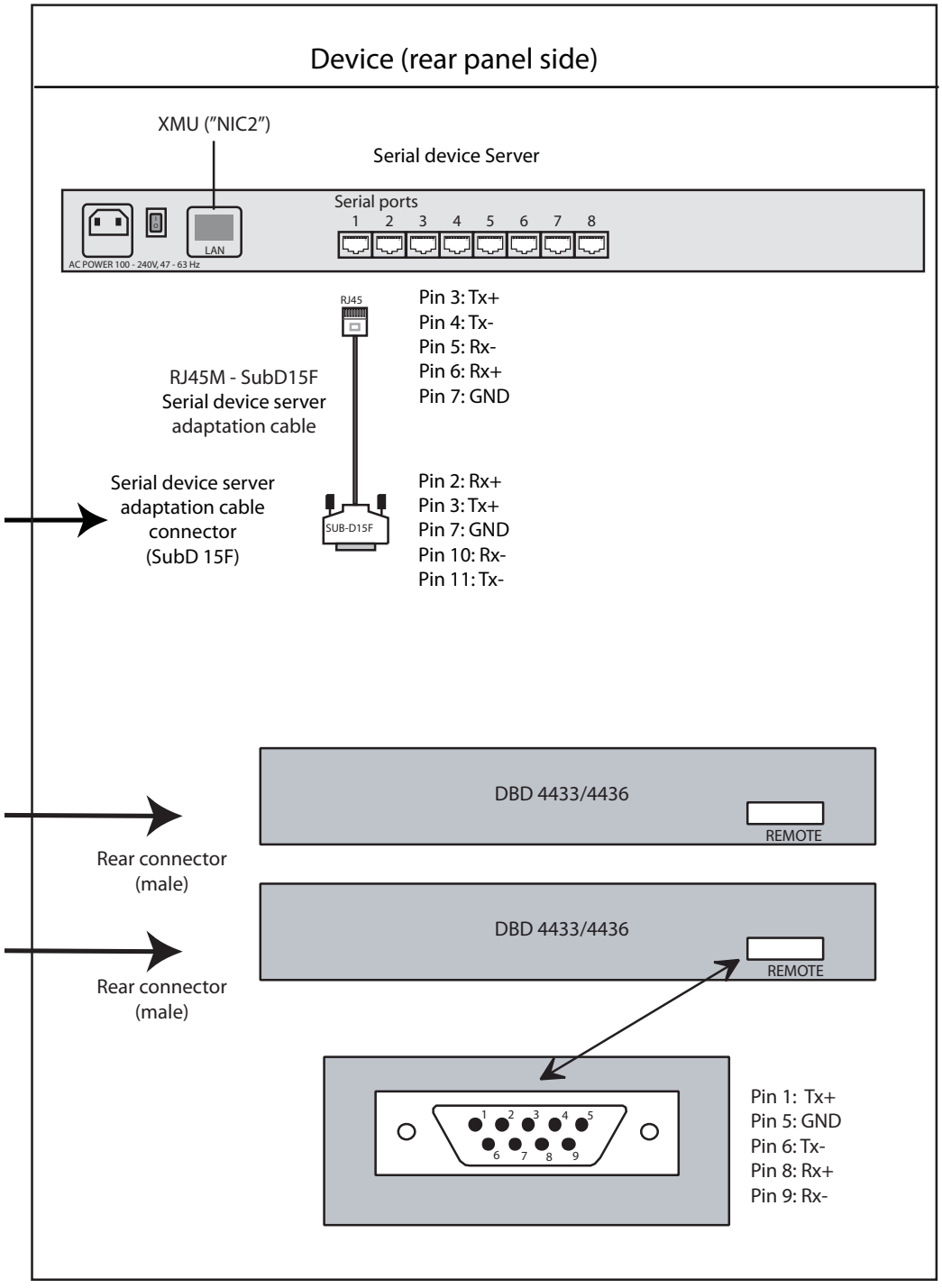



Device (rear panel side)
DTE PORT A - H connector
of Switch/Converter
(male)
Connector of Switch/Converter N29HREPAA
Pin 2: TD
Pin 3: RD
Pin 7: GND
Switch/Converter
N29HREPAA
Connector of
DBD 4431/4434
Pin 2: Rx
Pin 3: Tx
Pin 5: GND
DBD 4431/4434
RS232 REMOTE

1.6.1.10 - XMU - DBD4433/4436 decoders

The DBD 4433 / DBD 4436 connector type (RS232 or RS485) is set by the position of the JP3 jumper on the main board (jumper must be set between pins 2 and 3 for RS485).




Device (rear panel side)
XMU ("NIC2")
Serial device Server
Serial ports
1 2 3 4 5 6 7 8
LAN
AC POWER 100 - 240V, 47 - 63 Hz
RJ45
Pin 3: Tx+
Pin 4: Tx-
Pin 5: Rx-
Pin 6: Rx+
Pin 7: GND
RJ45M - SubD15F
Serial device server
adaptation cable
Serial device server
adaptation cable
connector
(SubD 15F)
SUB-D15F
Pin 2: Rx+
Pin 3: Tx+
Pin 7: GND
Pin 10: Rx-
Pin 11: Tx-
DBD 4433/4436
REMOTE
Rear connector
(male)
DBD 4433/4436
REMOTE
Rear connector
(male)
1 2 3 4 5
6 7 8 9
Pin 1: Tx+
Pin 5: GND
Pin 6: Tx-
Pin 8: Rx+
Pin 9: Rx-

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Chapter 2

Operation

2.1 - Removable storage device management (USB key) 73
2.1.1 - Storage on Hard drive and removable storage device 73
2.1.2 - Removable storage device management 73
2.1.3 - Use of removable storage device 74
2.1.3.1 - Conserving reference configurations on USB keys 74
2.1.3.2 - To load a configuration onto another XMU 3600 75

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2.1 - REMOVABLE STORAGE DEVICE MANAGEMENT (USB KEY)

2.1.1 - Storage on Hard drive and removable storage device

To store the configuration of the supervised system, the XMU 3600 features:

- an internal hard drive;
- a USB interface for inserting a USB Key.

When the USB key is synchronized with the internal hard drive (the concept of synchronization will be explained in the next section), all parameters received by the XMU 3600 concerning the following elements will be automatically stored on the internal hard drive and the removable storage device:

- the entire system topology,
- the entire access control configuration,
- the entire configuration of each device operated by the XMU 3600,
- the automatic redundancy configuration,
- the maintenance and redundant states.

1. XMU can operate without any USB keys as the database is stored on the redundant 1 + 1 RAID 1 Hard Drive.
2. USB key features: standard USB2 key. It must support the "EXT3" file format. Recommended size: 1GB.

2.1.2 - Removable storage device management

The removable storage device (USB key) is managed as follows:

- In main mode, the configuration saved on the removable storage device is the same as the local one. Each local configuration change is copied onto the removable device;

- The configuration saved on the removable storage device serves as a reference on startup (if the configuration is valid). This means that each time the XMU is started up, the content of the removable device is copied to the XMU memory and becomes the new local configuration;
- If there is a mismatch between the local configuration and the configuration saved on the removable storage device on insertion, an alarm will be raised and the Operator will be able to choose between:
  - keeping the local configuration and copying it onto the removable device to have the same content on the removable device as on the local memory. To do this, use the "***Save in removable support***" command in the XMS 3500 {**Network Operation**} application;
  - applying the configuration saved on the removable device, which will become the new local configuration. An XMU reboot is required to use the removable storage device as a reference.
- An alarm is raised when the removable device is found to be write protected on startup or when it is inserted. This alarm will fall when the removable device is extracted.

2.1.3 - Use of removable storage device

Saving configurations to removable storage devices is useful for conserving reference configurations or loading configurations onto other XMU 3600s.

2.1.3.1 - Conserving reference configurations on USB keys

1. Plug the USB key into the XMU 3600;
2. Save the local configuration stored on the hard drive using the ***Save in removable support*** command in the XMS 3500 {**Network Operation**} application. The configuration stored on the hard drive will be copied onto the removable storage device;
3. Unplug the USB key.

2.1.3.2 - To load a configuration onto another XMU 3600

1. To retrieve a configuration, ensure that the software and hardware options on the second XMU 3600 (used to load the configuration) are identical to those on the first XMU 3600 (used to save the configuration).
2. In the case of XMU 3600 cold redundancy, 1 XMU must be switched on (either the nominal XMU or backup XMU). The two XMUs must have the same device parameters (IP addresses, etc.), options and licenses. Each one must be connected to the devices it is supervising and the XMS 3500(s) managing it. Each XMU has its own serial device server.

On the first XMU 3600,

1. Plug the USB key into the XMU 3600 if it is not already present;
2. Save the local configuration using the ***Save in removable support*** command in the XMS 3500 {**Network Operation**} application. The current configuration is copied to the removable storage device;
3. Extract the USB key;

On the second XMU 3600,

4. Plug the above-mentioned USB key into the second XMU 3600;
5. Switch on this XMU or restart it from the XMS 3500 {**Network Operation**} application if already switched on.

The configuration stored on the removable storage device will be copied to the hard drive and applied to the supervised system. The key and hard drive will then be synchronized. All changes made to the supervised system configuration by the XMS 3500 will be stored at the same time on the 2 types of storage media.

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Chapter 3

Servicing

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3.1 - INTRODUCTION

This chapter describes the following servicing operations:

- Accessing the Command Line Interface;
- Downloading firmware and software (performed via the Command Line Interface);
- Replacing a RAID1 hard drive;
- Replacing a Power Supply Unit;
- Using some maintenance commands;

3.2 - ACCESSING THE COMMAND LINE INTERFACE

In this and the following sections Command Line Interface will be abbreviated to CLI.

The CLI can be accessed in one of the following ways:

- via the Ethernet link and the PC **Telnet** application if the device IP address is known;
- via the serial link and the PC **hyperterminal** application (or any terminal emulator);
- or via a keyboard, monitor and mouse connected to the XMU 3600.

CLI use is the same regardless of the access mode used.

3.2.1 - Accessing the CLI via the Ethernet link

The CLI is accessed via the Telnet application installed on the PC.

The XMU 3600 IP parameters, which are required for Telnet connection, are given on the ***Acceptance Test Report*** shipped with the device.

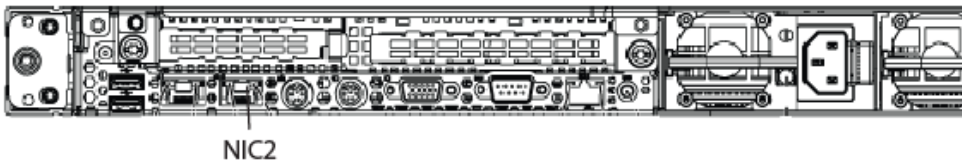
Factory settings:

IP address for eth1: 192.168.1.1

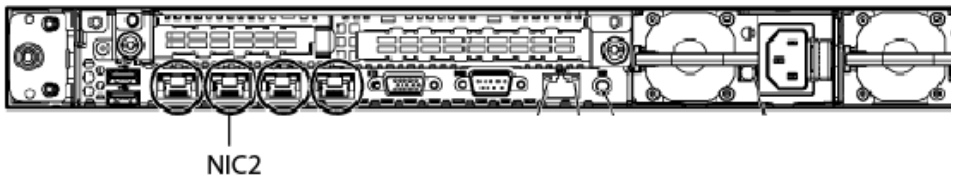
Subnet mask for eth1: 255.255.255.0

Default gateway: 192.168.1.254

DL360 G6 model



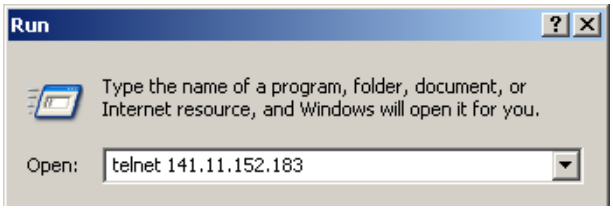
DL360 G7 model



1. Set up the Telnet application as follows:

Terminal options	No local echo, Block cursor, no CR LF
Emulation	VT100 / ANSI

2. Set up the Telnet connection between the PC and the XMU 3600.


Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
telnet 141.11.152.183

The welcome page displayed after connection will request the user login and password. You must use `admin` and `admin` as login and password respectively.

Caution! The CLI is case sensitive (`admin` is correct, `Admin` is not correct).

3.2.2 - Accessing the CLI via the serial link

The CLI is accessed via a RS232 serial link between the XMU 3600 and a terminal or a PC emulating a terminal.

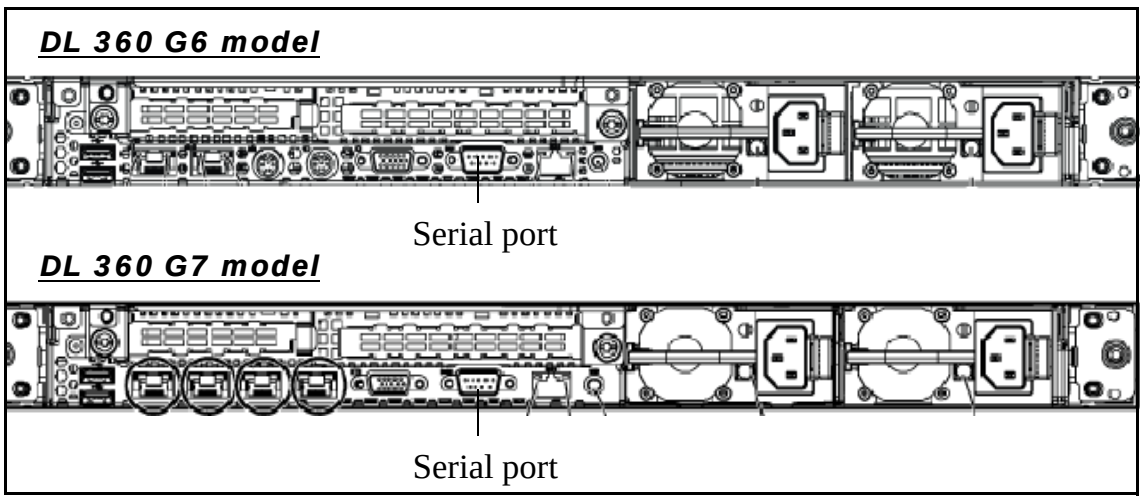


Figure 3.1: Serial port on the XMU rear panel

1. Set up the terminal port as follows: 9600 bauds, 8 bits, no parity, 1 start, 1 stop, no flow control.

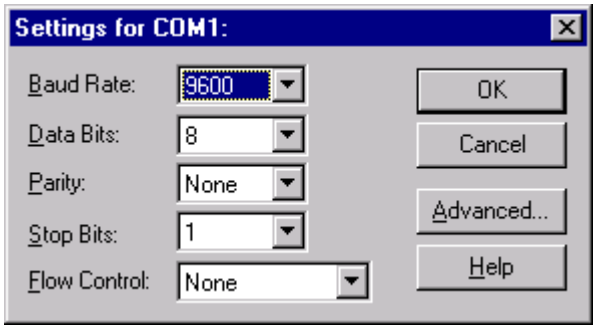


Figure 3.2: Terminal port setup for accessing the CLI

2. Click on ***OK*** to set up the connection between the PC and the XMU 3600.

The welcome page displayed after connection will request the user login and password. You must use `admin` and `admin` as login and password respectively.

Caution! The CLI is case sensitive (`admin` is correct, `Admin` is not correct).

3.2.3 - Accessing the CLI using a keyboard, monitor and mouse connected to the XMU 3600

Following machine startup, BIOS startup messages and then Linux distribution startup messages will be displayed, possibly followed by a few application software startup messages.

After about 2 minutes, the screen will stop displaying messages.

Press the **Return** key. The following line will be displayed:

```
Prompt <Hostname> Login:
```

Enter the login (`admin`) then press **Return**. The following line will be displayed:

```
Prompt Password:
```

Enter the password (`admin`) then press **Return**.

3.3 - DOWNLOADING FIRMWARE AND APPLICATION SOFTWARE USING THE CLI

It is also possible (and recommended) to use the {**XMU, ViBE and NetProcessor Download**} tool to download software embedded in XMU. This tool is located in the ***Equipment tools*** menu of the XMS Server.

Introduction

Two download types are authorized:

- Firmware download, which is also called system download. For the XMU, firmware comprises a Linux kernel and a set of required modules. Two banks are managed for this type of download (active and inactive);
- Software download or application download is used to load new XMU software. N banks are supported for this type of download (one active and N-1 inactive).

For a firmware download, a mechanism which toggles from the current software bank to the other one is used to switch from the active bank to an inactive bank. For an application download, the same mechanism is used to switch from the active bank to one of the inactive banks (to be selected among N where N is not limited). Toggle operation must be followed by a reboot.

Downloading is performed with the Command Line and TELNET.

An FTP server which supports the firmware or application software files to be downloaded onto the XMU 3600 must be installed on the PC. Although the downloading feature is compatible with all standard FTP servers, Thomson Video Networks recommends the use of FileZilla Server (you can get it on the Web via this link:
http://heanet.dl.sourceforge.net/sourceforge/filezilla/FileZilla_Server-0_9_18.exe).

Downloading is performed in passive mode (the XMU 3600 sets up the connection).

Downloading firmware

The XMU 3600 features two firmware memories. After downloading, one of these memories contains the firmware which has just been downloaded (but which is not installed), and the other contains the current firmware. The `firm_togg` command, which triggers a reboot, is used to install the downloaded firmware and uninstall the other one (without changing it).

If using downloaded firmware causes the device to malfunction, you can toggle to the previous firmware release. See section *Procedure for returning to the previous firmware or application software release, page 93*.

- This operation should be very rare. Do not perform any firmware download or toggle without a good reason and a written instruction. Moreover check if the firmware is compatible with the XMU hardware platform (most of the time a firmware is associated to only one XMU hardware platform).
- Current limitation: when firmware N and N-1 are installed, do not toggle back from N to N-1. You may experience an unstable XMU platform situation!
- After any firmware download and toggle, you need to uninstall and re-install the serial device service under XMU (through telnet session with the CLI commands: `uninstall_box`, `install_box`, `reboot`) in order to recover serial link communications.

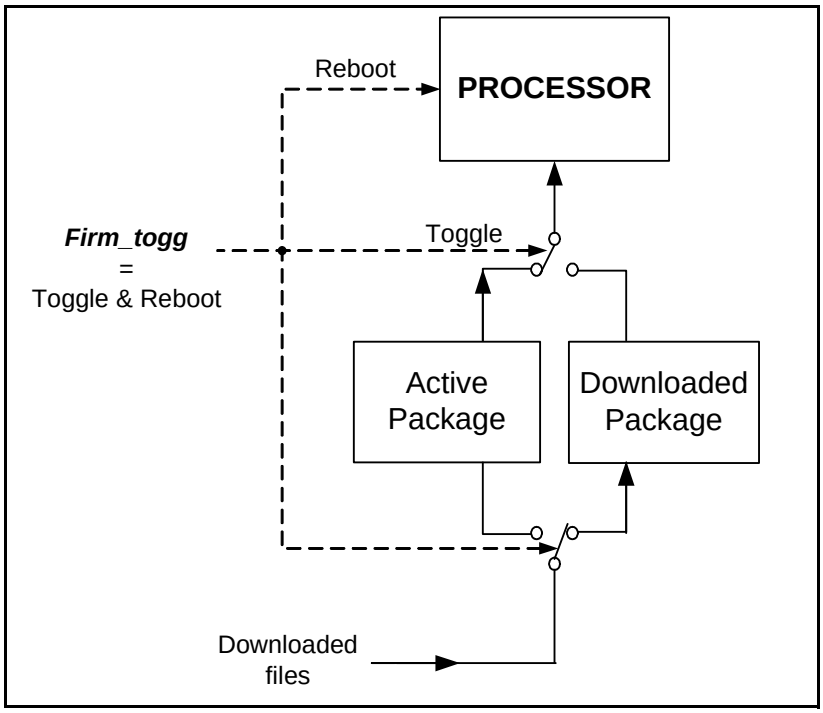


Figure 3.3: Firmware downloading and the toggle mechanism

Downloading application software

The same rules apply to application software downloads, but N banks are supported for this type of download (instead of 2 for the firmware). You can toggle each board to any previous application software saved in the N memory banks.

Warning: In case of downgrade application software (toggle from N to N-1), you are recommended to follow a specific procedure. Most of the time, the application software is upgraded (from N-1 to N) and not downgraded (N to N-1). Before downgrading a XMU software version (N to N-1), you need to remove the complete configuration of XMU:

• Login to the XMU (name: `maint`, password: `passmaint`) and run the command `rm_cfg` to remove the configuration;
• Toggle to the old XMU software version;
• Reboot the XMU.

3.3.1 - Displaying firmware or application software releases *(firm_view* and *appl_view)*

To display the firmware (or application software) releases installed on the device, type `firm_view` *(*or `app_view`*)* after the `XMU>` prompt:

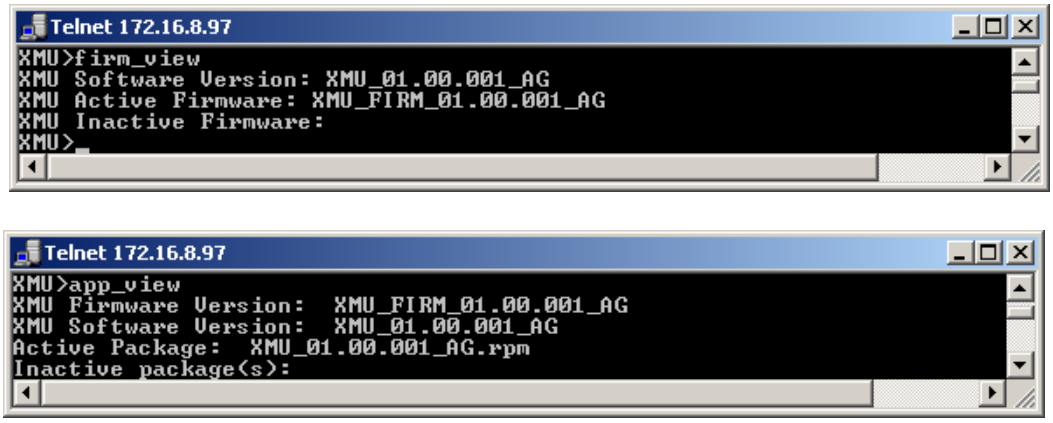


Figure 3.4: Displaying firmware and application software releases

3.3.2 - Downloading procedure (*app_view, firm_view, app_down, firm_down, app_togg, firm_togg, update*)

Caution! Unlike Software, Firmware changes are very rare. Do not proceed with any Firmware download or toggle without a good reason and a written instruction. In particular, with Firmware N and Firmware N-1 installed, do not toggle back from N to N-1 because you may experience an unstable XMU platform situation. **In other words: do not downgrade the firmware!**

1. Put the firmware or application software files to be downloaded on the FTP server;
2. Configure the FTP server.

For example, with a FileZilla Server:

- create an anonymous user;
- no account password is required;
- add the shared folder.

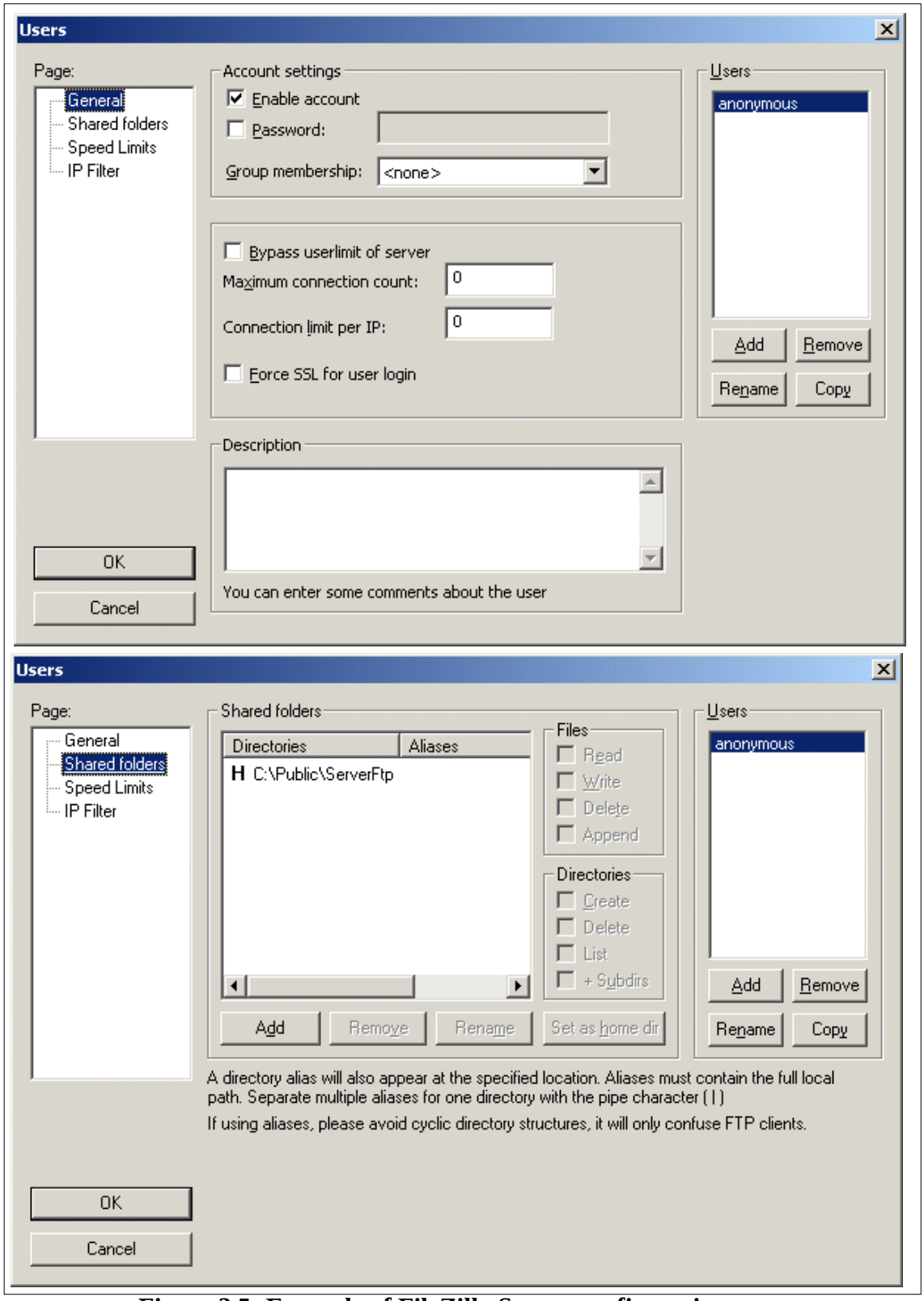


Figure 3.5: Example of FileZilla Server configuration

3. Using the Command Line Interface, type `firm_down` (`app_down`) after the `XMU>` prompt and set the parameters for accessing the directory containing the files to be downloaded:

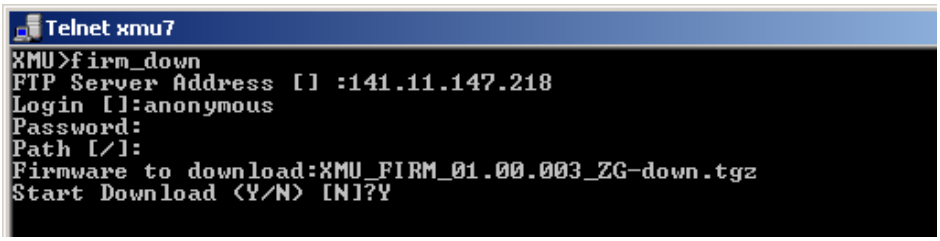


Figure 3.6: Downloading firmware and application software

`FTP Server Address`	Server IP address.
`Login`	FTP account "Login".
`Password`	FTP account password set when the server was installed.
`Path`	Path to directory containing the files on the server.

Notes concerning the `Path` field:

- The path must be set via the FTP server root;
- Directory names must be entered as they appear on the server (observe upper and lower case letters);
- Use " / " and not " \ " as a separator.

`Package to download`	Name of the file to be downloaded onto device (XMU_firmwareversion-down.tgz for firmware and XMU_applicationversion.rpm for application software). This file must be located in the previously indicated FTP server directory.

4. Type `Y` after the question `Start Download (Y/N) [N]?` to trigger downloading:
5. Check downloading progress using the `firm_view` (`app_view`) command.

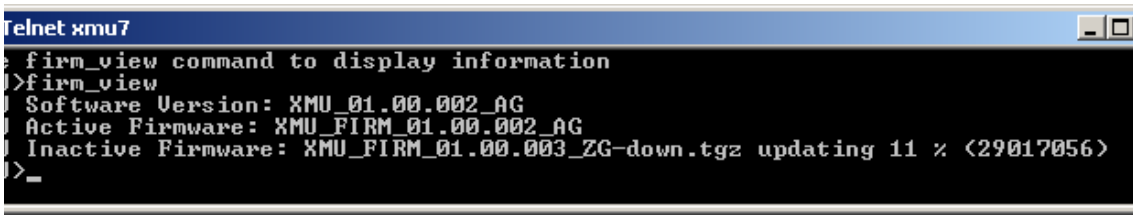


Figure 3.7: Displaying downloading progress - *firm_view* command

6. When downloading is complete (after the downloaded firmware has been saved in the inactive firmware bank, i.e. after the downloading and installation steps), enable the downloaded software by typing `firm_togg` (`app_togg` followed by the name of the inactive package to be loaded) after the `XMU>` prompt:

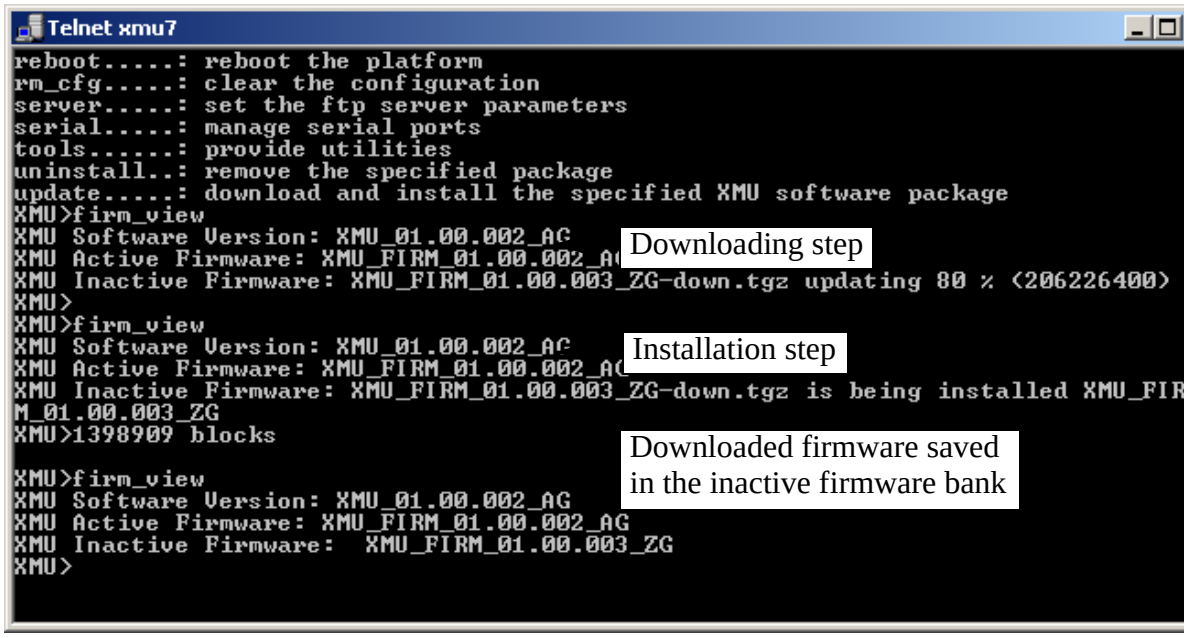


Figure 3.8: Downloading steps

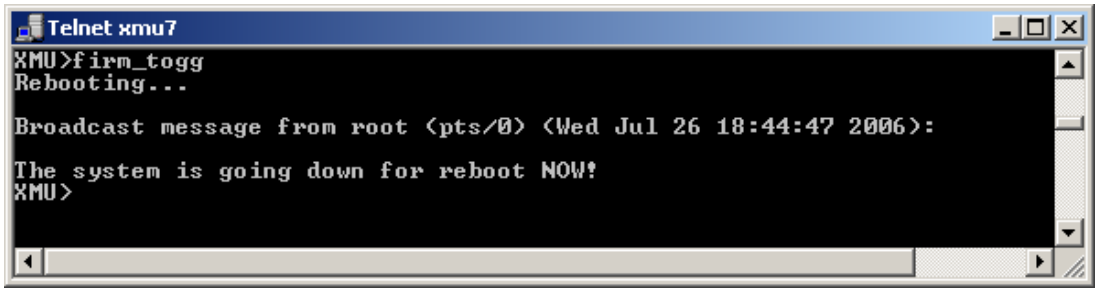


Figure 3.9: Firmware software toggling - *firm_togg* command

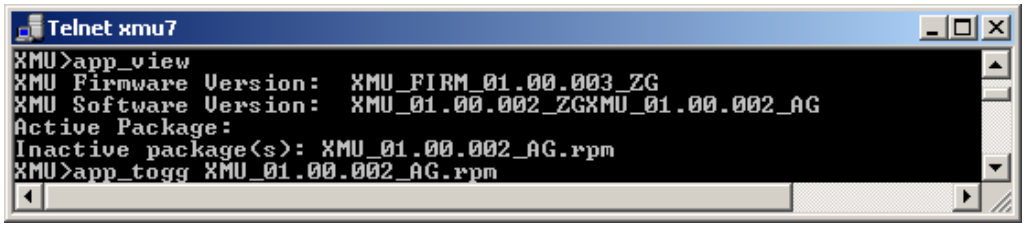


Figure 3.10: Application software toggling - *app_togg* command

1. The `firm_togg` command includes an automatic reboot, which allows the new firmware to be run;

2. The `app_togg` command automatically runs the new application software (no reboot is required in this case, but the application is stopped and rerun);

3. In the Command Line Interface, the `update` command followed by the software name enables a software download to be followed by immediate application of the new software (similar to `app_down` + `app_togg`).

3.3.3 - Procedure for returning to the previous firmware or application software release

You may need to return to the previous firmware or application software release if running downloaded software causes the device to malfunction.

Type `firm_togg` or `app_togg` followed by the name of the inactive package to be activated after the `XMU>` prompt.

Caution! When **firmware N and N-1** are installed, **do not toggle back from N to N-1**. You may experience an unstable XMU platform situation.

3.4 - REPLACING A RAID1 HARD DRIVE

The XMU 3600 detects hard drive faults and informs the Operator via the *Alarm* view in the XMS {**Network Operation**} application.

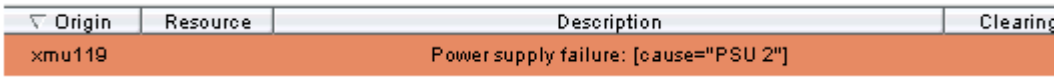


Figure 3.11*: Alarm* view in the XMS {Network Operation} application

Replace the hot-plug hard drive as soon as possible:

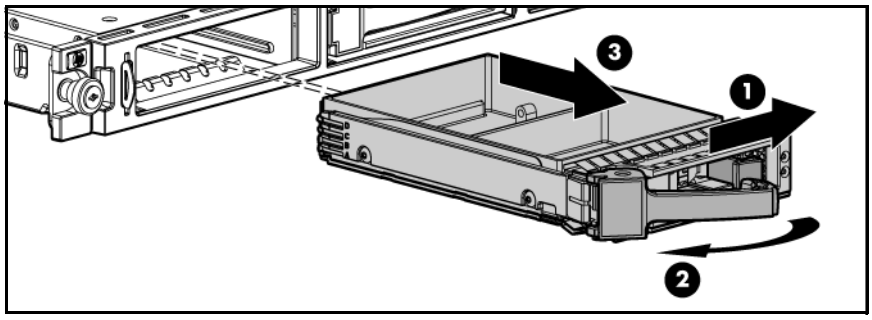


Figure 3.12: Unplugging the faulty hard drive

3.5 - REPLACING A POWER SUPPLY UNIT

In the event of one PSU failure, the colors of the LED on the front panel and in the HP Systems Insight Display are as follows:

- System power LED: Green
- Health LED: Amber
- Power Supply LED in the HP Systems Insight Display: Amber

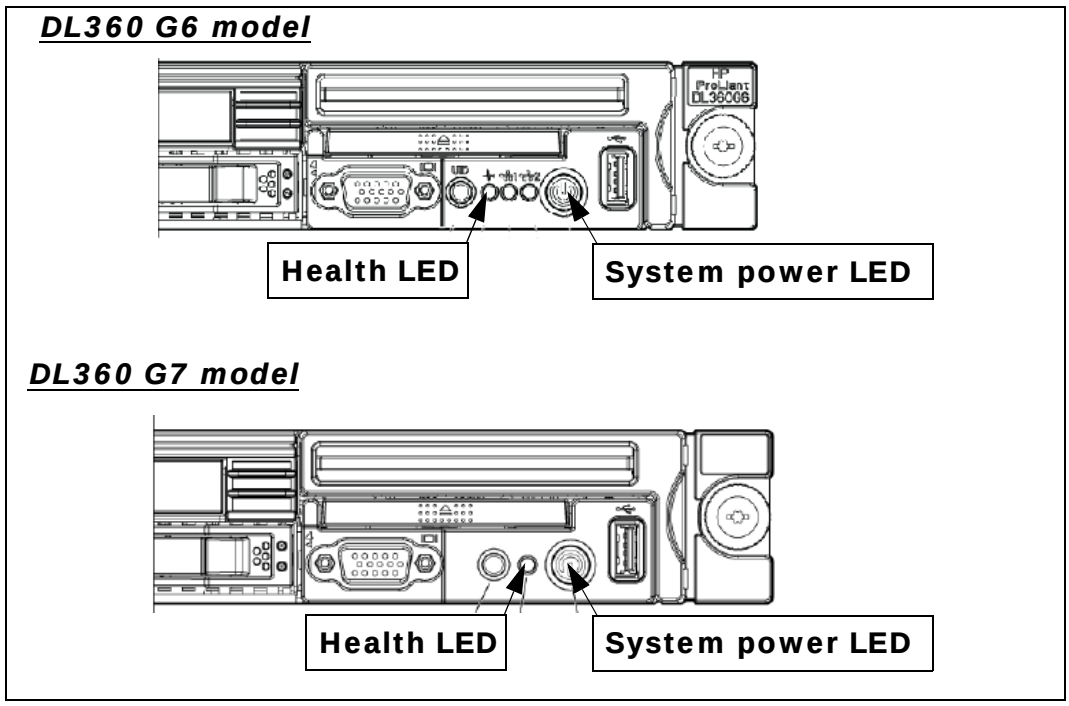


Figure 3.13: System power LED and Health LED (Front panel)

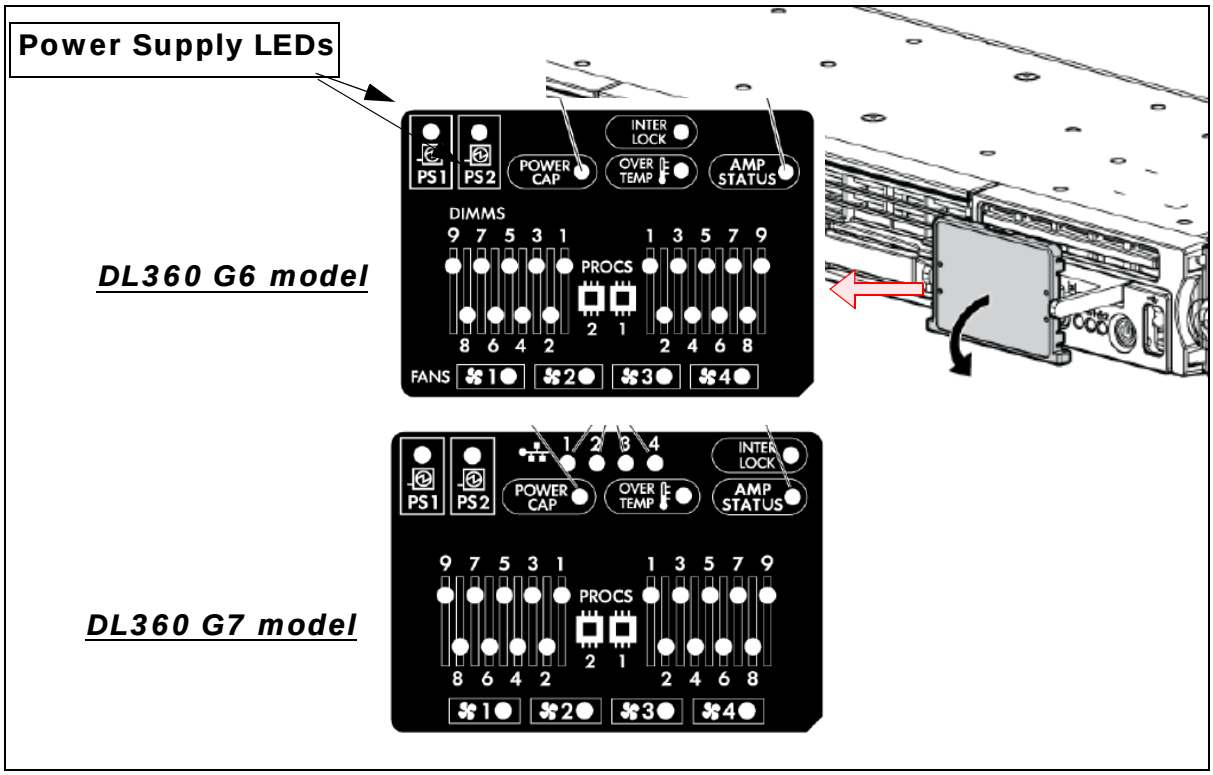
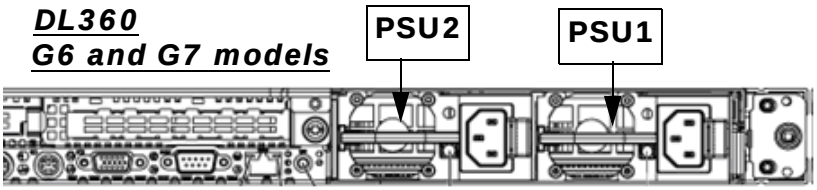


Figure 3.14: Systems Insight Display, Power Supply LED (Front panel)

PSU location:



Replace the hot-plug PSU according to the following instructions (extracted from the *HP™ ProLiant DL 360 Documentation* provided by the server manufacturer):

Unplugging the faulty PSU

1. Unfasten the cable management solution to access the power supply bays.
2. Disconnect the power cord from the power source.
3. Disconnect the power cord from the power supply.
4. Remove the hot-plug power supply by pushing the power supply ejector button (1) then pulling the power supply from the server (2).

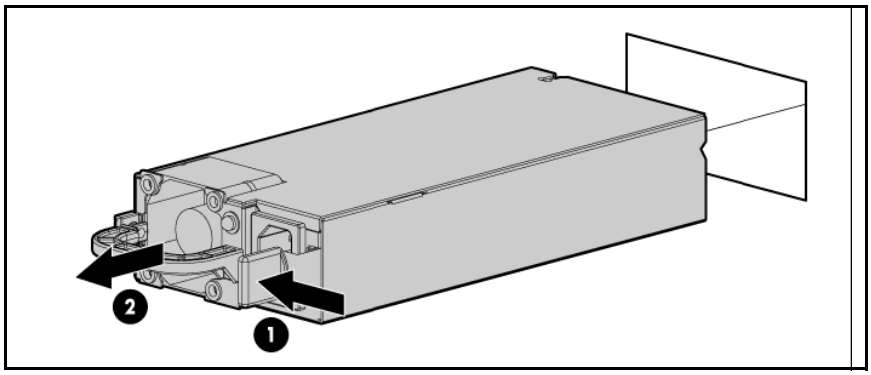


Figure 3.15: Unplugging the faulty PSU

Plugging in the faulty PSU

1. Slide the hot-plug power supply into the power supply bay;
2. Connect the power cord to the power supply;
3. Install the cable management arm, if removed;
4. Route the power cord through the cable management arm or power cord anchor;
5. Close the cable management arm;
6. Connect the power cord to the power source;
7. Be sure that the power supply LED is green.

3.6 - OTHER MAINTENANCE COMMANDS

The CLI provides many commands. Some of these commands are not, however, intended for the device user but reserved for Thomson Video Networks use only. It is therefore important to **only use the commands described in this manual** so as not to disrupt device operation or jam the device, as this would require assistance from Thomson Video Networks Customer Services.

Enabling the ping feature (*ping*)

The Ping feature is a network tool used to test whether a particular host can be reached via an IP network. Ping works by sending ICMP “echo request” packets to the target host and listening for ICMP “echo response” replies. Using interval timing and response rates, ping estimates the round-trip time and packet loss rate between hosts.

To "ping" a host from the XMU, proceed as follows:

1. Using the Command Line Interface, type `tools` to get the `XMU tools>` prompt and `help` after the `XMU tools>` prompt to display all the commands related to the tools feature.

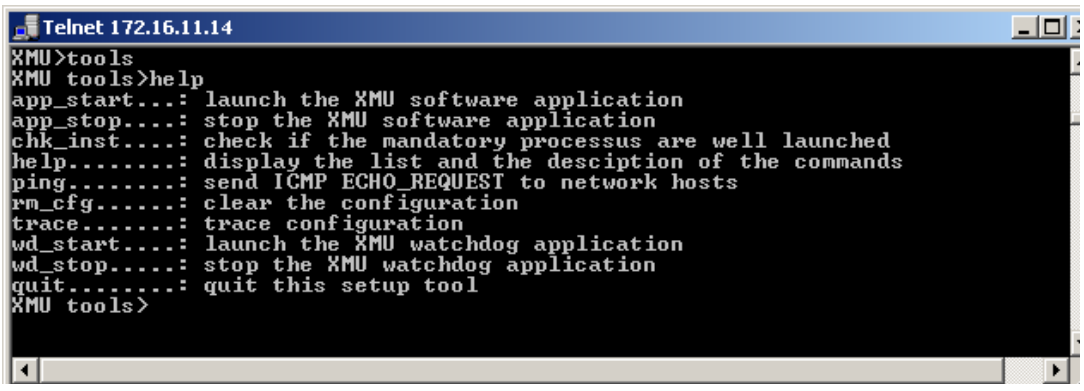

Telnet 172.16.11.14
XMU>tools
XMU tools>help
app_start...: launch the XMU software application
app_stop....: stop the XMU software application
chk_inst....: check if the mandatory processus are well launched
help........: display the list and the desciption of the commands
ping........: send ICMP ECHO_REQUEST to network hosts
rm_cfg......: clear the configuration
trace.......: trace configuration
wd_start....: launch the XMU watchdog application
wd_stop.....: stop the XMU watchdog application
quit........: quit this setup tool
XMU tools>

Figure 3.16: Help menu related to the Tools feature

2. Type `ping` followed by the IP address of the host to be reached.

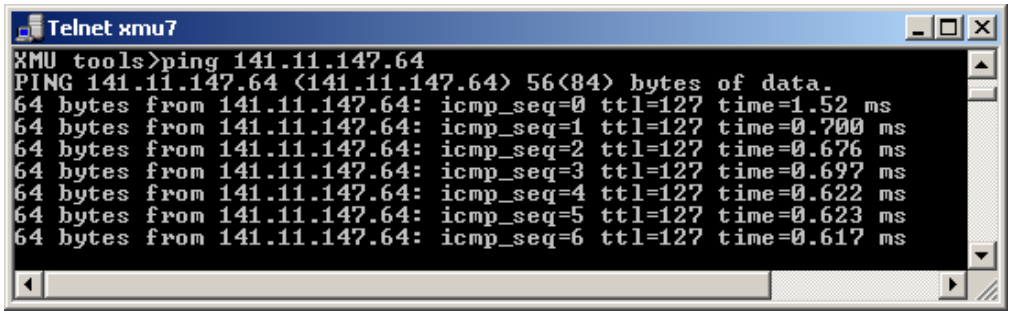

Telnet xmu7
XMU tools>ping 141.11.147.64
PING 141.11.147.64 (141.11.147.64) 56(84) bytes of data.
64 bytes from 141.11.147.64: icmp_seq=0 ttl=127 time=1.52 ms
64 bytes from 141.11.147.64: icmp_seq=1 ttl=127 time=0.700 ms
64 bytes from 141.11.147.64: icmp_seq=2 ttl=127 time=0.676 ms
64 bytes from 141.11.147.64: icmp_seq=3 ttl=127 time=0.697 ms
64 bytes from 141.11.147.64: icmp_seq=4 ttl=127 time=0.622 ms
64 bytes from 141.11.147.64: icmp_seq=5 ttl=127 time=0.623 ms
64 bytes from 141.11.147.64: icmp_seq=6 ttl=127 time=0.617 ms

Figure 3.17: Pinging a host device

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Thomson Video Networks
Département Marketing - Service Documentation
Rue du Clos-Courtel
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Email:

Your comments:

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